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## **How Dual Identity Processes Foster Creativity**

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**Abstract**

We propose a theoretical model explaining when and why possessing two inconsistent social identities can foster superior creativity. The framework describes how during cultural adaptation individuals (1) *alternate* their identities across contexts, (2) *integrate* elements of their distinct (i.e., remote and uncorrelated) identities, and, having formed cognitive and emotional links with the new group (3) *broaden* their self-definition. We explain how these processes of cultural adaptation map onto three fundamental creative processes: (1) an ability to quickly and effortlessly switch between cognitive strategies and semantic categories, (2) an apparent ease in integrating distant and conflicting ideas, and finally, (3) the widening of ones' creative idea base. Our model explains how the challenges involved in managing complex self-definitions enhance creativity, and increase potential for novel problem solutions. Understanding this dynamic brings a new perspective to debates on the value of diversity.

Keywords: ACCULTURATION, DIVERSITY, TOLERANCE, FLEXIBILITY, CREATIVITY, COGNITION

In the era of global economy, where financial markets force individuals and companies to constantly re-structure and implement new strategies, thinking flexibly and creatively is essential to personal and professional success. Creativity allows people to develop new, innovative products (IBM, 2010; Lombardo & Roddy, 2010), negotiate business solutions (Maddux & Galinsky, 2009) manage complex power relations (Sligte, De Dreu, & Nijstad, 2011), and avoid painful losses (Baas, De Dreu, & Nijstad, 2011; Roskes, De Dreu, & Nijstad, 2012). Creativity is thus essential to tackling problems, fostering change, and innovation. Moreover, recent findings suggest that rather than being a stable trait, this unique human ability can be developed and fostered in response to the *experience of social diversity* (Crisp & Turner, 2011; Maddux, Adam, & Galinsky, 2010; Plaut, 2010; Ritter et al., 2012; Simonton, 1997). This is a tantalizing thought: As our societies become increasingly diverse - changing from the provincial, homogenized worlds that have characterized much of human history - could such a shift have profound benefits for the way individuals think and behave? This article is about the link between diversity and creativity, and how considering the dynamics of cultural adaptation provides some important new insights in to cultural evolution and social change.

### **Diversity and Dual Identities**

In homogenous societies, peoples' identities are highly overlapping (Crisp & Hewstone, 2007; Homan, van Knippenberg, Van Kleef, & De Dreu, 2007): individuals are members of highly correlated groups, for instance the manager in a company will be White, middle-class, male and highly educated, while his cleaner may be a Latino, working-class, uneducated and female. But with increased social mobility in multicultural societies, diversity fault-lines break down, and many individuals gain the opportunity of entering new groups that they have traditionally

been barred from<sup>1</sup>. As a result, they develop dual identities such as Chinese-American, business-woman, secular-Buddhist. Our review focuses on the intra-individual consequences of adopting such identities. We argue that the cultural adaptation to living in new groups - groups that have traditionally been unrelated to ones' initial identity - provides a challenge to people's self-definition, and the manner in which individuals process information. Throughout the paper, when we talk of dual identifiers, we consider individuals who belong to two (or more) different groups, regardless of those groups category domain. We do so because different types of cultures can characterize all sorts of social categories - such as gender, profession, social status, or personal interest (Cohen, 2009) - and not just national or ethnic cultural groups.

Being a member of two traditionally unrelated groups is not an easy task. Dual identifiers, such as female-engineers, or Chinese-Americans, are forced to adopt and negotiate between various, often opposing sets of cultural proscriptions. A Chinese-American will adopt different identities and sets of behaviors depending on whether they find themselves in a Chinese or American cultural context (Benet-Martínez, Leu, Lee, & Morris, 2002; Hong, Morris, Chiu, & Benet-Martínez, 2000; Morris, Menon, & Ames, 2001; Morris & Mok, 2011). This will be similar to the experience of a working class background academic assuming a middle-class set of behaviors when attending an academic conference, but changing their language and behavior while back in the family home. Both have, in the course of their lives, become simultaneous members of culturally distinct groups, and this experience necessitated the development of new skills and abilities (Benet-Martínez, 2012; Cohen, 2009).

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<sup>1</sup> That people can be affiliated to multiple social groups is not a new or exclusively social psychological idea. For instance Georg Simmel (Simmel, 1950) observed that in the Australian Aborigine culture the whole population is divided into five 'gentes' with members of the various gentes found across many different tribes.

Compared to their more “homogenous” peers, dual identity individuals, throughout their cultural adaptation experience, learn to alternate between their two identities, reconcile inconsistent values or cognitions, and broaden their self-definition. When individuals are highly attached to one salient identity only, this imposes limitations on how they generate (Adarves-Yorno, Postmes, & Haslam, 2007), and assess (Adarves-Yorno, Postmes, & Haslam, 2006) creative ideas. But changes from managing narrow, correlated identities, to creating a more complex identity structure, pose a challenge for everyday functioning, and self-definition, and can, if successfully addressed, lead to the development of more creativity. As a result, we argue that individuals who enter new groups, and develop deep relationships with those groups, become better at cognitive switching (for review see Bialystok & Craik, 2010), integrating apparently inconsistent ideas (Benet-Martínez, Lee, & Leu, 2006; Tadmor & Tetlock, 2009), and recruiting from a wider base of cognitions in idea generation (Leung & Chiu, 2010). When generating creative ideas, these individuals show an enhanced tendency to use multiple semantic categories (Maddux & Galinsky, 2009), their ideas are rated as more novel and original (Fee & Gray, 2012; Kharkhurin, 2011; Tadmor, Galinsky, & Maddux, 2012), their negotiation solutions are more creative (Maddux & Galinsky, 2009), they display higher levels of innovation, and even a higher rate of promotion at work (Tadmor et al., 2012).

These findings suggest that something about the experience of simultaneously belonging to two (or more) distinct groups has beneficial impact on creativity. But what aspects of possessing a dual identity are necessary for such benefits to be realized? To address this question, we first define dual identity experiences by calling upon their three characteristics: depth, dual engagement, and the combination of

identities that are culturally distinct. Then, we define creativity, and consider *how* the dynamic of dual identity adaptation leads to the development of creative cognition.

Developmental models of multiple identity adaptation (Amiot, de la Sablonnière, Terry, & Smith, 2007) describe how acquiring new social identities prompts an intra-individual development processes, allowing individuals to manage and integrate their old and new identities. Building on this perspective, we argue that as individuals progress through their cultural adaptation experience, they develop different strategies for managing and integrating their new and old identities, and progressively train cognitive faculties that are conducive to creativity. Each stage of dual identity development involves the use of specific cognitive skills that, if practiced extensively, could generalize to increased flexible and creative thinking in other domains, unrelated to the dual identity. Illuminating when and how this happens sheds a new light on the value of diversity and multiculturalism in the workplace, and for the society at large (Mendoza-Denton & España, 2010; Plaut, Thomas, & Goren, 2009; Verkuyten, Thijs, & Bekhuis, 2010; Verkuyten, 2007).

### **Characteristic Conditions**

Before we go on to describe how developing a dual identity affects creative thinking, it is necessary to define *what kind* of experiences are at the center of our focus. Membership in two groups will most likely lead to enhanced flexible and creative thought when characterized by the following three components: depth, dual engagement, and cultural distance.

#### **Depth**

First of all, benefits to creativity, including benefits from dual identity experiences, are most likely when individuals develop a deeper relationship with the two (or multiple) groups that they belong to. Depth entails the length and/or degree of

engagement with one's two identities, and is a prerequisite for individuals to thoroughly process the information related to their new role. Consistent with this idea, uplifts to creativity due to dual identity experiences are mostly found in individuals who had the opportunity to immerse themselves in the culture of the new group (e.g., host nation), and develop a strong identification with both their old group (e.g., home culture), as well as their new group. For instance, in the studies of Tadmor and colleagues (2009, 2012), membership in two cultural groups lead to increased creative thought only in individuals who developed a deep engagement with both (instead of only one, or none) of their identities. Across five studies, in those who were exposed to two cultures, but only identified with one of them, creativity remained at a level comparable to that of the assimilated or separated one-group identifiers (Tadmor et al., 2012; Tadmor & Tetlock, 2009). In a similar vein, in the studies of Maddux and Galinsky (2009) individuals who underwent a deep acculturation experience, such as when living abroad, performed better on a range of creativity tasks, but this uplift was *only* observed in those who lived abroad, rather than simply stayed abroad for a short visit or vacation (Maddux et al., 2010; Maddux & Galinsky, 2009). "Depth" effects have also been observed in individuals exposed to many cultural groups, where the level of engagement with a multicultural environment positively predicted creative flexibility, innovation, and performance at work (Godart, Maddux, Shiplov, & Galinsky, 2014; Maddux, Bivolaru, Hafenbrack, Tadmor, & Galinsky, 2013).

So something about the depth of one's diversity experience, such as living in and adopting to a host culture, or developing a strong identification with the new group (Morris, Mok, & Mor, 2011), and the social, psychological, and behavioral adjustments that such adaptations require, leads to the kinds of fundamental changes seen in the literature on cultural diversity and creativity (Benet-Martínez et al., 2006;

Leung & Chiu, 2010; Maddux & Galinsky, 2009; Tadmor et al., 2012; Tadmor & Tetlock, 2009). Structural features of the situation, and the newcomers' skills can give us an idea about potential for depth. For instance, while living in an asylum seekers' detention centre, or a ghettoised part of the city, isolated migrants often have insufficient opportunity to learn about the new culture and will not undergo full cultural adaptation. On the other end of the spectrum, highly mobile and educated "citizens of the world", with superior communication skills and cultural intelligence (Imai & Gelfand, 2010; Mor, Morris, & Joh, 2013), or high levels of openness to experience (Leung & Chiu, 2008), are more likely to quickly and efficiently engage with their new group, and, as long as they maintain the original link with their home culture, they are likely to benefit from their experience. La Fromboise, Coleman & Gerton (1993) summarize this well by listing several skills necessary for developing a deep relationship with ones' new and old reference group: knowledge of beliefs and values of the new group, positive attitude to both groups, bicultural efficacy, communication ability, knowledge of culture-appropriate behaviours, and social groundedness (La Fromboise, Coleman, & Gerton, 1993). One can imagine that without those competencies, no newcomer will fully and successfully be able to engage with a group.

### **Dual Engagement**

A second characteristic condition is dual engagement. Benefits to flexible and creative thought have been found in individuals who belong to at least two different cultural or social groups, for instance bilingual or bicultural adults. To put it differently, to experience benefits to creativity, people need to have the opportunity to see the world through the eyes of different social identities. For instance, a Chinese person living in China will not be dually engaged, unless, in addition to being



identified with their original culture, they develop interpersonal links with individuals from a second culture, and see the world through a new set of cultural lenses. In other words, a dually engaged person is someone who has undergone the process of adaptation to living and functioning in a new group, but at the same time has remained identified with their original culture. In this sense, dual engagement entails identifying with, and interacting with, (at least) two cultures.

The most widely adopted framework for understanding psychological reactions to such diversity experiences is the *acculturation model*. Acculturation, in the more narrow sense, describes the process through which immigrants moving to a new country psychologically react to their new social reality, a reality in which they must resolve potential conflicts between their original cultural identity and their new identity (Berry & Annis, 1974; Sam & Berry, 2010). In a broader sense, acculturation can also refer to psychological changes and adaptations that result from the influence and contact with another cultural group. Although acculturation literature has typically been applied to understand the experience of immigrants, the basic principles underling the model - how people deal with adapting to a new group membership - can help define how dual identity experiences, more generally, stimulate creativity.

Central to the model are acculturation strategies. These strategies, proposed by Berry (1974), reflect differences in the extent to which the acculturating individual is motivated to engage with the host culture, and/or motivated to maintain a link with their original culture. The strategies range from assimilation (forgoing one's original culture in favor of the new) to separation (maintaining one's home culture with no engagement with the host culture). For instance a Muslim arriving in Canada, who is strongly motivated to fit in, may assume an *assimilation strategy*: decide to distance

themselves from their home culture, and get as close as possible to becoming a Canadian person. On the other hand, a political refugee whose primary motivation for arriving in Canada is survival, may not be interested in the Canadian home culture, and follow a *separation strategy* – organize their life in a Muslim-only community that is separated from the mainstream culture of the home country. Acculturation research has argued for disadvantages of assimilation and separation to immigrants' well-being (La Fromboise et al., 1993), and that the strategy allowing for most beneficial outcomes is an *integration strategy* - where the individual engages with both category representations of the host and home cultures; this strategy is also most endorsed among minority members (Dovidio, Gaertner, & Saguy, 2009; Verkuyten, 2005), and leads to the development of the type of dual engagement that is at the heart of the current model.

This “dual engagement” of host and home culture is indeed important for peoples' well-being (La Fromboise, Coleman, & Gerton, 1993). Individuals who adopt this strategy, and engage with both host and home (or original) cultures are often described as *bicultural* (Hong et al., 2000; La Fromboise et al., 1993; Nguyen & Benet-Martínez, 2007; Phinney & Devich-Navarro, 1997; Phinney, Horenczyk, Liebkind, & Vedder, 2001). There are a range of benefits that accrue from developing this sort of dual identity (rather than choosing to either assimilate or separate oneself from one or other culture). Bicultural individuals report feeling more at ease interacting with individuals from outside their ethnic minority group (Buriel et al., 1998), and demonstrate heightened well-being, health, socio-cultural prowess, low stress, and cultural skills (La Fromboise et al., 1993; Linville, 1987; Sam, Vedder, Liebkind, Neto, & Virta, 2008). Most importantly, there is evidence that this type of dual engagement can enhance flexibility and creativity.

Benet-Martínez and colleagues (2006) found that compared to a mono-cultural control group, Chinese-American bi-culturalists were more likely to integrate multiple perspectives in which different ideas were compared and contrasted (rather than relying on the first, dominant, response that came to mind). Relatedly, Gutierrez and Sameroff (1990) presented Mexican-American mothers with vignettes which described a family in which a child had behavioral problems. They found that compared to mono-cultural mothers, bi-cultural mothers were more likely to sample a wider range of behaviors by identifying the interacting role of environmental, constitutional, and psychological influences, rather than identifying a singular cause (e.g., environmental factors). Also in the studies of Tadmor and colleagues (2009; 2012) cited above, dual identifiers, but not individuals identifying with one culture only, showed higher levels of *integrative complexity* - the capacity and willingness to acknowledge the legitimacy of competing perspectives on an issue, and to forge conceptual links among these perspectives (Suedfeld & Tetlock, 2001). In addition, these dual identifying individuals performed more creatively in laboratory settings, were more innovative in their workplace, and registered the highest promotion rate at work, compared to low identifiers, and their assimilated or separated peers (Tadmor et al., 2012). In studies tracing multicultural experiences (but not specifically dual identities) breadth of experiences – operationalized as the number of countries that one lived in – has also been positively (at the lower end of a curvilinear relationship) associated with creativity improvements (Godart et al., 2014).

### **Cultural Distance**

Even when it comes to deep dual engagement with two different groups or cultures, not all diversity experiences are created equal. Most importantly, groups can differ in cultural distance. Cultural distance is the degree to which the values,

customs, and characteristics predominant in two groups diverge (Benet-Martínez & Haritatos, 2005; Benet-Martínez et al., 2002). Imagine a Brit spending a year in the USA. She will probably not face as many conflicts in customs, values, and ideas as a Brit spending a year in China. Similarly, a bank employee will not find it too challenging if he or she is asked to relocate and work in a different branch of the same bank. If cultural distance is low, as in this case, it is easy to engage with both cultures; in fact, the similarities between the two cultures may be so unchallenging that *de facto* assimilation occurs. With low cultural distance dual engagement makes no functional difference because the values, customs and characteristics of both cultures converge to such an extent. It is only when individuals experience some *dissonance* between the host and home culture, will they be compelled to seek integratively complex solutions to problems (see Tadmor et al. 2012).

This issue is well illustrated in studies on Bicultural Identity Integration and cognitive complexity (Benet-Martínez, Lee, Leu, 2006). These researchers compared cognitive performance of individuals high and low in BII (note that here BII was used as a unitary construct). Chinese-American participants were asked to answer questions about the degree to which the two cultures in which they participate are conflicted with one another (Bicultural Identity Integration), and were subsequently asked to write 10 statements about the American culture, Chinese culture, or a neutral landscape. Bicultural participants who reported that their identities remained in conflict wrote more dense and complex descriptions of cultures, compared to those who did not think their identities were in conflict (Benet-Martínez, Lee, Leu, 2006, Study 2), suggesting that *perceived* cultural distance, or inconsistency between one's two identities, forces individuals to think hard about, and elaborate on cultural issues.

One reason for the importance of cultural distance is that as long as the norms of the two groups remain in conflict, this encourages individuals to elaborate on that conflict, and form integratively complex solutions. For instance a lawyer working at an environmental NGO may at first be quite startled to see that many of their work colleagues have a criminal record, and this is not condoned by the organization. However, if the newcomer remains deeply engaged and pursues this issue further, they may discover that criminal record is linked to their colleague's environmental activism, and, within the culture of the organization, is considered something to be proud of, rather than frowned upon. Having a legal background, and working in an NGO, the lawyer has now acquired two contradictory sets of beliefs about the meaning of having a criminal record. As we argue in further sections of our paper, this can prompt a process of resolving inconsistent norms and values, which can benefit individuals' creativity during identity integration – the second stage outlined in our model (see Figure 1).

To summarize, next to *depth* and *dual engagement*, *cultural distance* is a third important characteristic of the sort of diversity experiences that may enhance creativity. Without the involvement of tangible differences, uplifts to creativity would simply not exist. In short, in order for dual engagement to be functionally relevant for creative thought, the norms and values of the two groups must be different in ways that trigger (and require) a new way of thinking.

### **Creativity**

Before we explain how the adaptation to dual identity experiences influences creativity, it is good to briefly define creativity, and explain what cognitive processes lead to creative ends. Creativity is the process of bringing into being something that is novel and useful (Amabile, 1996; Baas et al., 2011; De Dreu, Baas, & Nijstad, 2008;

Roskes et al., 2012). Creative insights and products result from ordinary cognitive processes (Ward, Smith, & Finke, 2008), that include the ability to flexibly and effortlessly switch between various sets and approaches to a problem (Ashby, Isen, & Turken, 1999; Heilman, Nadeau, & Beversdorf, 2003; Nijstad, De Dreu, & Rietzschel, 2010; Schank & Abelson, 1977), to integrate inconsistent ideas (Kunda, Miller, & Claire, 1990; Leung & Chiu, 2010; Tadmor et al., 2012; Thagard, 1997; Wan & Chiu, 2002), and to recruit ideas from a broad knowledge base (Eysenck, 1993; R. S. Friedman, Fishbach, Förster, & Werth, 2003; Isen & Daubman, 1984). In the cognitive literature, these types of thought processes are often labelled as creative cognition (Ward et al., 2008; Ward, Smith, & Vaid, 1997), and in social-psychology, they are equivalent to creative flexibility (but not creative persistence, see Dual Pathway to Creativity Model; De Dreu et al., 2008; Nijstad et al., 2010). Importantly, these types of creative processes are limited by what people have learned – habits and knowledge acquired in the family or via the education system, as well as cultural proscriptions that people have been exposed to in their initial group (Adarves-Yorno et al., 2007; S. M. Smith, Ward, & Schumacher, 1993; Ward, Smith, & Finke, 2007). However, we argue, because the adaptation to ones' own diversity is associated with exposure to new norms, and the necessary change of old thinking habits, it can help individuals overcome barriers to flexible and creative performance. Thus, by learning to navigate a new reality, where old knowledge is no longer useful, and new cultural scripts need to be applied instead, dual identity individuals train cognitive skills that are conducive to “thinking out of the box”.

### **Changes in Categorization**

So far we have argued that experiences of adapting to new groups, that are deep, involve dual engagement, and involve two groups that espouse significant

cultural differences, can change the way people behave and think. These conditions provide the basis for understanding not only when, but also *how* such experiences can stimulate creative thought. This is because these characteristic conditions require an individual to adopt a novel way of thinking (for reviews see Crisp & Meleady, 2012; Crisp & Turner, 2011; Leung, Maddux, Galinsky, & Chiu, 2008) in order to operate effectively in their (somewhat unique) social environment. This is apparent in the early stages of adapting to a second group membership, when *alternation* allows perceivers to compartmentalize cultural knowledge, bringing with it enhanced-sensitivity to environmental cues and rapid adaptation in the form of categorical frame-switching. As individuals begin to feel the need to reconcile the two identities' characteristics into their self-concept, reconciling conflicting values, ideas, and customs, they practice *integration* - a process in which attributes of seemingly irrelevant cognitions are reconciled to form a new entity (Hampton, 1997; Thagard, 1997; Wan & Chiu, 2002; Ward, Patterson, Sifonis, Dodds, & Saunders, 2002). Finally, as dual identity individuals begin to think of themselves as members of a more *inclusive* social category, they gain simultaneous mental access to a broader range of cognitions, which enables them to recruit ideas from a wider range of semantic categories, increasing their chance for creativity (Leung & Chiu, 2010; Ward, Patterson, & Sifonis, 2004).

### **Alternation**

In homogenous environments, knowing what group one belongs to, and what norms and values that group espouses, can guide individuals' behavior in an effortless and rapid fashion. But long-term sojourners and immigrants, or employees following mergers find themselves simultaneous members of two (or more) groups with visible differences in code of conduct or norms espoused. If, as a result of their experience,

they develop a dual identity, in any given situation, they are facing *multiple* potential ways to categorize themselves, as well as *multiple* potential ways to behave.

As suggested by the dual engagement prerequisite, to function well dual identity individuals must abide by the rules of both groups that they are members of. Because, due to *cultural distance*, these rules will be different, dual identity individuals must also quickly recognize when the norms of one group are more appropriate than those of another. Not recognizing this could have severe consequences to their well-being, and position in the society. For instance a British expat living in Thailand must realize that while making jokes about the Royal Family may be considered harmless in the UK, it may lead to imprisonment in Thailand. In order to function in Thailand, the expat will constantly have to be aware of which situation they are in, in order to ensure they exhibit the appropriate behavior. Depending on the context, they will then activate one of their identities and the repertoire of beliefs and behaviors that come with it.

Dual identity individuals deal with their own diversity by alternating between the two relevant frames or identities - a process that has typically been referred to in the cross-cultural literature as *frame-switching* (Hong et al., 2000; L E Bell, 1990; Ramirez-Esparza, Gosling, Benet-Martínez, Potter, & Pennebaker, 2006 for an overview of studies see Table 2). Those who have become adept at frame-switching are able to independently activate meaning systems relevant to which of the two contexts they find themselves in (see Figure 1). For instance, Hong et al. (2000) showed that Chinese-American bi-culturalists exposed to American primes made more internal attributions (a Western attributional style), while those exposed to Chinese primes made more external attributions (an East Asian attributional style). Examining this example more closely, we can imagine how, depending on the context, Chinese-



Americans will speak English or Cantonese, exhibit more independent (American) or interdependent (Chinese) cultural norms, or type using American or Chinese characters on their keyboard. By dynamically varying the frame of reference, these individuals learn to more flexibly activate various ideas and meanings that are adaptive in a given context (E. R. Smith & Semin, 2007; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987)<sup>2</sup>. This frame-switching can help them navigate the world. However developing superior switching skills in domains unrelated to culture may also be of benefit when performing tasks requiring creative thought.

**Set-switching and creativity.** Mental set shifting, which frame-switching is a special case of, involves the disengagement of a relevant task set, the subsequent active engagement of a relevant task set, and an ability to perform a new operation despite the interference from the previous task set (N. P. Friedman et al., 2006; Miyake et al., 2000). This type of skill is central to creativity (De Dreu et al., 2008; Nijstad et al., 2010; Nijstad, 2002). To perform creatively people need to “break set” (Duncker, 1945; S. M. Smith & Blankenship, 1991) and easily move between different categorical frames of meaning (Nijstad et al., 2010). Set switching helps on tasks where the obvious solution stored in memory may hamper generation of the right answer (e.g., the Duncker candle problems, such as in the studies of Maddux & Galinsky, 2009), or in any other type of creative activity where it is relatively difficult to overcome obvious responses (Gocłowska, Crisp, & Labuschagne, 2013; Landau & Leynes, 2004; Marsh, Ward, & Landau, 1999; Sassenberg & Moskowitz, 2005).

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<sup>2</sup> Although the discussion of the direction in which switching occurs is beyond the scope of the current paper, it is worth mentioning that researchers also registered cases of switching in the direction opposite to the culture primed (Benet-Martínez et al., 2002; Mok & Morris, 2010). This probably occurs, because in some contexts, individuals may want to distance themselves from one of their identities. Essentially however, the creative set-switching process that we discuss in this section is trained as a result of the act of switching itself, and not of the direction of the switch.

In a divergent thinking task, a classic in the measurement of creativity, people are typically asked to generate different uses for an object (Guilford, 1950). While doing this, the originality of their answers will benefit from drawing on different conceptual categories, and easily switching between these categories (Gocłowska, Baas, Crisp, & De Dreu, 2014). If, while generating uses for a plastic bottle, participants come up with answers such as “to drink from”, “carry water”, “store liquid”, “keep drink in”, their answers stay within one conceptual category, indicative of low creativity. However, being able to effortlessly move among different semantic categories would render more original ideas, such as “use as a piggy bank” (storage), “throw at someone” (weapons), or “use instead of a football” (games), at a lower cognitive cost (Roskes et al., 2012; Roskes, Elliot, Nijstad, & De Dreu, 2013).

Consistent with this idea, creativity has been linked to improved performance on cognitive measures that require the suppression of immediately accessible responses, such as the paper version of the color Stroop test (Golden, 1975). More recently, creativity was linked to a decreased Stroop effect following a rule switch, suggesting that creative individuals have higher sensitivity to contextual demands, and can more easily switch to rules that are appropriate in a given context (Zabelina & Robinson, 2010). Thus, if individuals, in the course of their diversity experience were to gain an apparent ease in context-dependent activation of the right task set, this should increase their creativity (Baas et al., 2011; De Dreu, Nijstad, Baas, Wolsink, & Roskes, 2012; Roskes et al., 2012).

**Facilitation of frame-switching abilities.** Evidence of superior generalized frame-switching in dual identity individuals is most apparent from the bilingualism literature (Bialystok, Craik, Klein, & Viswanathan, 2004; Bialystok & Martin, 2004; Bialystok, 1999; Kharkhurin & Samadpour Motalleebi, 2008; Martin-Rhee &

Bialystok, 2008; Prior & Macwhinney, 2009; For an overview of studies see Table 2). Culture is expressed in terms of language, and the majority of frame-switching individuals will experience their different cultural frames as embedded in the use of a different language (La Fromboise et al., 1993; Ramirez-Esparza et al., 2006). In fact, since the majority of bi-culturalists are bilingual<sup>3</sup>, and vice-versa, superior creative performance has been uncovered in both biculturalism and bilingualism studies (Kharkhurin, 2008, 2011; Maddux & Galinsky, 2009; Tadmor et al., 2012). Bicultural and bilingual individuals are constantly required to monitor their environment in order to enact the relevant cultural scripts. This leads to improved sensitivities to the immediate social or cultural context (Hong, Benet-Martínez, Chiu, & Morris, 2003; Hong, Chiu, & Kung, 1997; Hong et al., 2000), but also to an apparent ease in the use of multiple categorical frameworks.

Research showed that bilingual children perform better (to mono-linguals) on the dimensional change card sort task, a task in which they are required to shift the sorting rule (color or shape; Bialystok, Craik, Klein, & Viswanathan, 2004). Adult bilinguals showed a smaller Simon effect – the interference of one rule with the other – compared to monolingual participants. Similar results were achieved with the use of the Navon task (1977) and the Trail Making Task (Wodka et al., 2008). More directly, Prior & Macwhinney (2009) have shown that it is specifically the switch cost that differentiates performance of bilingual and monolingual individuals: when asked to perform a task in which the rule changed in subsequent trials, bilinguals were significantly faster to correctly perform on switch trials (Prior & Macwhinney, 2009).

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<sup>3</sup> The overlap between bilingualism and biculturalism is well illustrated in the studies of Bialystok & Martin (2004). In two experiments, conducted in Canada, English speaking monolingual children were contrasted with English-Cantonese bilingual children. Specifically, the bilingual sample “used Chinese regularly with their families, but English outside the home”. While living in Canada and exposed to English speaking majority culture at school, these children also participated in a Chinese community, where “it is possible to function entirely in Chinese.” (Bialystok & Martin, 2004, pp. 335).

In a recent paper Kharkhurin (2011) suggested that these abilities can contribute to the creative capacity of bilingual individuals. Indeed, the increased ease in task-switching ability in bilinguals seems to be accompanied by superior *creative* performance (Kharkhurin, 2008, 2009, 2010a). Studies have found that bilinguals (compared to monolinguals) score higher on the established Abbreviated Torrance Test of creativity (Kharkhurin, 2008), and draw more atypical pictures of alien creatures (Kharkhurin, 2009, 2010a). Echoing the principles of depth and dual engagement, improvements in creativity, in those studies, were more likely to occur in those with longer second-culture exposure (Kharkhurin, 2008), and those who became highly proficient in either of the languages (Kharkhurin, 2010a). In addition, in a sample of American-Middle Eastern University students, bilinguals with high English proficiency (akin to high depth of bicultural engagement) exhibited superior originality and invariance violation (drawing atypical features of aliens), compared to those with low English proficiency (low depth). They also displayed lower Stroop interference, which was correlated with creative performance, suggesting mediating role of switching ability (Kharkhurin, 2011).

In sum, creativity benefits from the ability to easily move between different frameworks of meaning, an ability that is developed when diversity experiences involve the maintenance of two cultural systems. However, creativity is also increased when individuals learn to re-combine ideas in entirely new ways (Amabile, 1996; Groborz & Nęcka, 2003). Also these skills are trained via adaptation to dual identity experiences. Below we discuss these dynamics of dual identity integration.

### **Integration**

Although dual identity individuals can successfully navigate their social world by frame-switching, over time they may experience the need to achieve a more

coherent sense of self. Imagine Ishrat, a daughter of Pakistani parents who attends a British school. There is considerable cultural distance between the two groups that Ishrat belongs to. To conform to the values of her peer group, during the day Ishrat may adopt a more Western style of clothing or behavior. Being simultaneously accountable to her British peers and Pakistani parents Ishrat will switch back to traditional garment and behavior when coming back from school. But this strategy remains functional only as long as the two worlds can be kept separate. When they collide, for instance when Ishrat is confronted by her grandparents for not wearing a hijab while at school, she will notice the conflict, and to maintain her belongingness to both social groups, become motivated to find a more satisfying resolution (Phinney & Devich-Navarro, 1997). Indeed, research has shown that when individuals realize the existence of two opposing identities and the cultural demands that follow, they experience this as an intra-individual conflict that they wish to resolve (Amiot et al., 2007; Gil, Vega, & Dimas, 1994; Leong & Ward, 2000; Walsh, Shulman, Feldman, & Maurer, 2005). To reconcile these opposing views and cultural norms Ishrat may attempt to find the creative “middle way” between her two conflicting identities. For instance, she can resolve the conflict by coming up with a different way of wearing her headscarf, to give it a more modern and “westernized” look (Khali, 2010; Somerville, 2008). In this process of conflict resolution, *novel, creative* qualities emerge (i.e., a new way of wearing the headscarf), that help resolve the conflicting cultural proscriptions associated with being British, and being a Muslim.

**Inconsistency integration and creativity.** Integrating conflicting cognitions has long been associated with the emergence of new, creative qualities (Gocłowska et al., 2013; Huang & Galinsky, 2010; Miron-Spektor, Gino, & Argote, 2011; Wan & Chiu, 2002). According to Piaget (1971, 1975), when interactions or experiences do

not easily fit within a child's existing world-view, they must reconcile this novel information with their current beliefs or creatively change these beliefs to fit this new information. In social categorization research, when being encouraged to think about individuals who belong to two, stereotypically incongruous categories (e.g., a *Black* CEO, a *Gay* Soldier, a *Female* Mechanic), research participants have been shown to come up with novel, revised impressions of that target (Crisp, Hewstone, & Rubin, 2001; Hall & Crisp, 2005; Hastie, Schroeder, & Weber, 1990; Hutter & Crisp, 2005; Kunda et al., 1990). For instance, when describing a female-mechanic, rather than describing her as a warm and nurturing (traits stereotypic of female), or greasy and crude (traits stereotypic of a mechanic), participants would use *novel* characteristics, not derived from either of the constituent categories: they would describe her as rebellious, or progressive, as only the use of such characteristic can explain the inconsistent combination of the cognitions female *and* mechanic.

Although conducted to investigate ways of reducing prejudiced behavior (Crisp, Ensari, & Hewstone, 2003; Crisp & Hewstone, 2007; Mullen, Migdal, & Hewstone, 2001; Urban & Miller, 1998), the findings of counter-stereotype research seem to reflect what in the creativity literature is known as *concept modification* (Amabile, 1996; De Dreu et al., 2008). Concept modification is a creative operation in which two inconsistent cognitions, when combined, lead to the emergence of new, creative qualities. As people combine old words in new groupings, new vocabulary emerges (e.g., a "boomerang flu" to indicate a recurring flu pandemic; a "bait car" referring to a car used to catch carjackers; Wisniewski, 2001). When patterns from nature are applied to everyday problems, new inventions, such as the Velcro, are made (in fact, the invention was originally inspired by burr seeds sticking to the inventors' dogs' fur). Finally, when features of existing animals are recombined in

unusual configurations, creatures of legends, such as hippogriffs, sphinxes and centaurs are born (Canciary, Levorato, & Cicogna, 2001). Echoing the principle of cultural distance, these sort creative concept modifications are especially likely when the two colliding concepts are opposing and unrelated (Estes & Ward, 2002; S. M. Smith et al., 1993).

Not only has it been shown that merging two inconsistent cognitions leads to the emergence of creative qualities, but also that doing so can carry over to a more creative way of thinking on an unrelated task. For instance, in one set of studies, Wan and Chiu (2002) asked participants to solve a set of novel (e.g., What is a piece of furniture that is also a kind of fruit?) or ordinary (e.g., What is a piece of coat that is also a piece of animal skin?) conceptual problems. Those primed in this way with incongruent conceptual combinations performed better on the Figural tests of the Torrance Tests of Creativity Thinking (Experiment 1), and built more creative LEGO models (Experiment 2) – tasks that were unrelated to the initial cognitive inconsistency. Similar findings were obtained when priming stereotypic and schematic inconsistencies (Gocłowska et al., 2013; Vasiljevic & Crisp, 2013). In one study, thinking of a stereotypically inconsistent female mechanic lead to more flexible and creative thinking, on a subsequent task, compared to a condition in which individuals thought of a consistent “male mechanic” combination (Experiment 1, Gocłowska et al., 2013). These types of primes also lead to the generation of more creative ideas and posters (Experiment 2, Gocłowska et al., 2013), and better solutions to insight problems (Vasiljevic & Crisp, 2013 Experiment 3)<sup>4</sup>. Uplifts to creative and flexible cognitions have, furthermore, been found when exposing participants to conflicting mental frames (Miron-Spektor et al., 2011), bodily postures

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<sup>4</sup> It's important to note that these effects are conditional upon Personal Need for Structure, in such a way that individuals who are comfortable with uncertainty and inconsistencies (low PNS) are most likely to benefit from exposure to inconsistencies (Gocłowska et al., 2014; Gocłowska & Crisp, 2013).

inconsistent with ones' mental state (Huang & Galinsky, 2010), or experiences (in a virtual reality lab) that were inconsistent with expectancies about the laws of physics (Ritter et al., 2012). Thus, across a multitude of situations, an apparent conflict between different cognitive frames was found to breed superior flexible and creative thought, beyond the task where the inconsistency was observed.

**Superior generalized integration in dual identity individuals.** Dual identity entails constant training in the resolution of conflicting categories, and one could thus expect dual identity individuals to exhibit a superior generalized skill at integrating conflicting cognitions. Indeed, in line with this prediction, the views of dual identity individuals tend to be more complex and integrated than those of assimilated or separated individuals. Bicultural individuals' descriptions of culture, and of a neutral landscape alike, were more differentiated: they included multiple perspectives and tended to more often compare and contrast various ideas (Benet-Martínez et al., 2006). In other research (Tadmor and Tetlock, 2009), biculturals were more integratively complex across domains: when describing a problem related to culture or work they were more likely to look at the issue from many perspectives, and accept the idea that these different perspectives or dimensions of the problem are valid (e.g., that some people view abortion as a civil liberties issue, while others see it as murder of helpless infants).

This seems to suggest that beyond being able to recognize and switch between various perspectives, bicultural individuals can more easily, or more readily, think of the reasons for why the two inconsistent cognitions are valid, and integrate those two inconsistent cognitions in one system. This type of superior ability to accommodate inconsistencies, contingent upon the development of a dual identity, was replicated across six experiments (Tadmor et al., 2012; Tadmor & Tetlock, 2009). Furthermore,



integrative complexity mediated effects to superior creativity, additionally strengthening evidence that these effects can generalize beyond identity issues (Tadmor et al., 2012). Other studies have supported this assertion. Recently, a study of biculturals with blended identities (who are the most likely to have developed a broader identification) showed that in the presence of multicultural cues, these individuals become more creative because they recruit more ideas on how to solve a problem (Saad, Damian, Benet-Martinez, Moons, & Robins, 2012). Another line of research, studying Asian-Americans, and female-engineers showed that individuals' whose identities are more integrated (high BII) are better able to combine ideas from their two identities to come up with creative products. For instance Asian-Americans whose identities were more integrated came up with more creative pizza recipes, when they could use ingredients related to either of their identities. In Study 2, female-engineers high in identity integration came up with more creative mobile devices when they knew that these devices would be used by other females (Cheng, Sanchez-Burks, & Lee, 2008).

It seems thus, that in addition to frame-switching, *immersive* membership in two *unrelated* social groups may increase individuals' ability to integrate and recombine existing concepts, leading to the emergence of novel, unique qualities - an ability that is central to creative endeavors. However alteration and inconsistency resolution are not the only solutions to managing complex self-definitions. Individuals have also been shown to deal with their dual group membership by assuming a broader sense of identification. Identifying oneself in terms of higher-order identities, we argue, could make it easier for individuals to access, simultaneously, a wide base of cognitions, increasing the likelihood that individuals will come up with novel solutions to problems.

### **Inclusion**

While inconsistency resolution helps dual identity individuals resolve day-to-day practical issues, such as how to settle two conflicting cultural rules, this cognitive strategy may not be sufficient to address more general questions of personal identity. To achieve a more coherent sense of self dual identity individuals may rather attempt to shift perceptions of their own cultural and national identity (Amiot et al., 2007), by recognizing the simultaneous value of their two identities, and merging them within a more inclusive category (Gaertner & Dovidio, 2000): pan-national identity (e.g., European), pan-ethnic identity (Portes, 1997), or thinking in terms of “humanity”, or “citizens of the world” (Amiot et al., 2007; McFarland, Brown, & Webb, 2013; Sussman, 2000). The development of such a broader identity, we argue, would support creativity of dual identifiers by widening the base of ideas, norms, and behaviours accessible at any one time.

To illustrate, a woman who, in the past, described herself primarily as a “mother”, but who, throughout her work experience developed professional identity “engineer”, could integrate those two identities under a broader self-definition, for instance a “professional woman”. When asked to think of behaviours characteristic of her in-group, she could easily access characteristics and behaviours linked to this broadened sense of self, and the associated wide base of cognitions, without the necessity of switching between two different mental sets. In other words, by integrating being a mother and being an engineer under a higher-order identity – that of a “professional woman” – she would broaden the scope of cognitions, norms and values that she has immediate access to at any one time.

At the end of 1980’s in the USA, Bell interviewed career-oriented African-American women. These women were the first among their community to embrace

high-status “White” professions, while maintaining links with their original African-American community. One of them said: “In many ways, I think white people are deprived. There is a richness from our duality that they will never have. (...) My world has a set of values, a set of expectations, a set of behaviour patterns, a language and a set of rewards. And that whole system was drawn from a broad base. Now parts of that system may be more particularly black in certain characteristics, while other parts are particularly white. But I think it is in that which I grew up with, it’s not one or the other.” (Bell, 1990, pp. 473).

**Knowledge activation and creativity.** To better understand how this type of broad identity described above breeds creativity, it is good to discuss the effect of knowledge activation on creative thought. When generating ideas and problem solutions, individuals are typically restrained by the activation of exemplars and narrow categories (Marsh, Ward, & Landau, 1999; Ward, Smith, & Vaid, 1997; Ward, 2007). This is because following the *path of least resistance* (Ward, 1994), people are drawn to retrieve typical and specific exemplars of known concepts, and assign the properties of those concepts to their novel idea. For instance, when asked to draw a novel exemplar belonging to a certain category (e.g., a new kind of animal), 60 to 65 % of participants base their creations on specific known instances from those categories: when trying to think up a new animal, they draw on features of cats, and when trying to think up a new ritual, they draw on typical features of weddings (Ward et al., 2002). In a similar vein, when generating traits that could describe an individual, people typically generate those traits that are most strongly associated with the schemata or salient exemplars from the group that that person belongs to (Hutter & Crisp, 2005; Kunda & Thagard, 1996).

Although this type of thinking provides efficiency in information processing (Macrae, Milne, & Bodenhausen, 1994), it can, at the same time, stifle the range of ideas that one has access to at any one time (Gocłowska et al., 2013; Sassenberg & Moskowitz, 2005; S. M. Smith et al., 1993). For instance, in one line of research individuals were primed (or not) with examples of invented sport disciplines, and subsequently asked to come up with ideas for a new kind of sport. New ideas tended to draw on the characteristics of the primes: for instance, individuals primed with a game that contained a ball and a bat, were more likely, subsequently, to generate another game that contained a ball and a bat, but not games that had to do with rowing, flying, or climbing (S. M. Smith et al., 1993). In other words, activating an exemplar acted as a cognitive anchor, and inhibited individuals' ability to invent sports that did not contain a ball and a bat. Thus, the more people thought of concrete exemplars and narrow categories linked to those exemplars (e.g., ball sports), the more likely were they to draw ideas from a narrow cognitive base.

Since exemplars restrict idea generation to their immediate associates (Mednick, 1962), interventions that compel individuals to abandon the use of exemplars or low level categories should increase creativity. For instance, when participants considered abstract demands of a situation, such as the environmental properties of a planet, this lead to the generation of more creative exemplars of alien creatures (compared to a neutral baseline, and an experimental condition in which participants were asked to think of animals that already exist; Ward et al., 2004). In a similar vein, participants with higher abstract reformulation skills came up with more creative solutions to the problem "presence of mice in ones' basement" (Reiter-Palmon, Mumford, O'Connor Boes, & Runco, 1997). Thus, overreliance on narrowly defined concepts or self-definitions limits the ideas and problem solutions that

individuals can draw upon when creating new things. However, broadening the categorical boundaries, such as when abandoning thinking in terms of a national identity, in favor of a European or pan-national identity, opens up the possibility of recruiting a wide range of problem solutions, leading to increased chances for creativity and innovation.

**Evidence of broader self-definition.** That dual identity individuals integrate their categorical representations in a wider, more inclusive identity is well illustrated in the development of pan-national or ethnic identities in immigrants (Amiot et al., 2007). Mobility within the European Union – a political structure that attempts to integrate the multitude of nationalities, languages, cultures and religions prevalent in Europe – has been shown to contribute to the development of a higher-order identity. For instance, British undergraduates who studied in another European country for a year, subsequently rated themselves as higher on belonging to a “European Cultural space”, exhibited a higher partly European identity, and showed more interest in European issues (King & Ruiz-Gelices, 2003). These results have been echoed in large-scale sociological research where mobility within European states predicted the development of a broader European identity (Spannring, Wallace, & Datler, 2008).

Similar processes have been observed when members of ethnic minority groups became involved with the majority culture. For instance members of the Armenian community in Turkey who attended a Turkish (majority culture) school, were more likely (compared to their separated peers) to identify with the higher-order Turkish identity, as well as a global, “human” identity (Der-Karabetian & Balian, 1991). So participating in a second culture helped these minority individuals to develop a more encompassing, higher order identity. Such findings echo the idea of the common in-group identity model (Gaertner & Dovidio, 2000), a theoretical

framework which argues that cross-group contact leads to a shift from categorization in terms of 'us' versus 'them', to a more inclusive 'we'. In this line of research, cooperation between two groups, and positive contact experiences, have been associated with developing a more inclusive, common in-group identity: both in multi-ethnic groups (Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990), as well as organizational mergers (Gaertner, Dovidio, & Bachman, 1996). Although originally tested in inter-group settings, we argue, this phenomenon is very similar to what happens when individuals develop a broader identity – they become more inclusive of the concepts, norms and behaviors characteristic of their new group. This widens the base of cognitions from which they recruit ideas and creative problem solutions at any one time.

**Broadening the scope of idea sampling.** Developing a higher-order identification (Cinnirella, 1997) is associated with the broadening of one's social circle, interests, and an increased likelihood of recruiting a wider range of ideas. For instance career-oriented African-American women interviewed by Bell at the end of 1980's, reported increased variety of environmental, social and cultural contexts that they took advantage of, relatively to their assimilated peers. Recruitment of foreign ideas is, in fact, a natural element of cultural adaptation. While exposing themselves to out-group members and their culture, individuals form interpersonal and affective links with those cultures, and gain knowledge of the language, customs and culture of their new group (Aron et al., 2004; Carlson & Widaman, 1988; Douglas & Jones-Rikkens, 2001; Hadis, 2005; Schmid, Hewstone, & Al Ramiah, 2012; Verkuyten et al., 2010; Wright, Aron, & Tropp, 2002; Zhai & Scheer, 2004; Zorn, 1996).

This type of openness to other people's perspectives is a pivotal aspect of multicultural success (Leung & Chiu, 2008), and successful inter-cultural

collaborations. For instance a study of managers showed that in intercultural collaborations, individuals high in affect-based trust (and thus more open to the “others’” ideas), are more likely to collaborate effectively, share ideas with their cross-cultural work partners, and together with them, come up with more creative idea solutions (Chua, Morris, & Mor, 2012).

Indeed, broadening one’s self-definition strengthens the emotional ties with the new in-group and their culture, and increases the salience of universal values and behaviours in common with other people. In the words of Sampson and Smith (1957), diversity experiences lead individuals to becoming a world-minded person – someone who “favors a world-view of the problems of humanity, whose primary reference group is mankind, rather than Americans, English, Chinese etc.”

Consistent with this idea, American students who had spent a year in Europe demonstrated (in a post-test, as well as compared to a matched control group) a subsequent increased concern in global politics and cooperation (international political concern; for similar evidence see Hadis, 2005; Zorn, 1996), increased intent to engage in contact with other cultures (cross-cultural interest), and a stronger respect for the values and traditions of other countries (cosmopolitan attitudes; Carlson, Carlson, & Widaman, 1988). In another line of research contact with individuals from other countries increased students’ global perspective and positive attitudes towards cultural diversity (Zhai & Scheer, 2004). The effects observed were in line with the depth and cultural distance principles outlined earlier in our model. The longer the engagement with a second culture, the stronger the effects to cultural sensitivity (Medina-López-Portillo, 2003), and global mindedness (Kehl & Morris, 2005). The more significant the cultural differences between the host and home culture, the greater the increase in world-mindedness (Douglas & Jones-Rikkens, 2001).

The breadth of one's interests has long been associated with creativity: for instance participating in broad extracurricular activities has been associated with divergent (creative) thought (Wallach & Wing, 1969; Kogan & Pankove 1974; Milgram 1978; Runco 1986), and openness to experience, a trait that entails increased receptivity and interest in various ideas and activities, counts among one of the strongest predictors of creative performance (McCrae, 1987). Beyond the increased interest in other cultures, individuals who experience diversity also are more likely, in a laboratory setting, to draw on foreign ideas in order to solve a concrete creative problem. In one line of research, participants were asked to think of a creative research idea, inspired by sayings on happiness attributed to various thinkers – from one's own culture, and from abroad. Across three experiments, the degree of multicultural experience of the research participants was associated with more breadth in idea sampling: participants with more multicultural experience, on a creativity task, were more likely to sample ideas from various cultures, rather than just their own cultural group. In addition, participants with more multicultural experience rated foreign sayings as more positive, relative to individuals with less multicultural experience (Leung & Chiu, 2010), attesting to the idea that these dual identifiers are more receptive to a wide base of idea building blocks.

In sum, individuals who become members of new groups are more likely to move away from narrowly defined self-categorization, towards a broader self-definition, and display a tendency to retrieve and sample a wider base of cognitions. This development of a broader idea base should allow them to free themselves from restraints associated with prototypical problem solutions available within their initial group, and enhance their chances of producing more creative and innovative ideas.

### **Time-Course of Individual Dual identity Adaptation**



We have discussed three characteristics of dual identity experiences that are prerequisite to observing benefits to creativity. The experiences are *deep*, require *dual engagement*, and involve membership in groups that are *culturally distinct*. To manage these sort of experiences, individuals can employ three distinct cognitive strategies, all of which can come to benefit creativity in different ways. Individuals may *alternate* between host and home cultural frames, they may *integrate* elements from those two cultural frames in order to resolve conflicting values, customs and attitudes, and finally, they may come to construe themselves in a more *inclusive* manner, leading to the recruitment of a wide idea base (see Figure 1). We do not believe that these three processes are mutually exclusive, rather, we propose a *continuum* of adjustment whereby, over time, characteristics of the dual identity experiences (e.g., acculturation and conformity pressures), and intra-individual phenomena (e.g., need to achieve a coherent sense of self), come to progressively trigger each identity process. This cumulative model is consistent with recent research on how the dual identity experiences come to be incorporated into one's *self-concept* (Amiot et al., 2007; Amiot & de la Sablonniere, 2010).

Dual identity individuals usually talk about their diversity experience as being self-defining – it has become a part of *who they are*, internalized. Research has shown that as people develop wider social networks, and in particular networks that involve diverse and differentiated bases for identity, they develop a more complex social identity - an integrated self-concept - that includes their disparate identities (Amiot et al., 2007; Amiot & de la Sablonniere, 2010; Roccas & Brewer, 2002). In the context of multicultural experience, this means conceptually integrating host and home cultures, as we have discussed. Indeed, Maddux et al. (2009) suggest that dual identity

experiences enhance creativity “because they help individuals *integrate* multiple cultures into their own personal and social identities (p. 739; italics added).

Importantly, the different cognitive strategies and consequences that we have discussed may be triggered at different points in the internalization process. At first, dual identity individuals are unlikely to attempt conceptual integration, and unlikely to feel included in the wider group. They will more likely be focused on correctly responding to the immediate acculturation pressures by learning the behaviors and values of their new group, and enacting them when the circumstances require. As such, alternation between two identities will characterize early stages of the dual identity experience (Hong et al., 2000). However, as time goes by, dual identity individuals will become increasingly aware of the value, custom and cultural conflicts that exist between the two groups of which they are members. When the need to resolve intrapersonal conflicts arises, they will use *inconsistency resolution* to work out these conflicts between their original and new identity, or cultural norms associated with those, so that each identity can be considered part of the self (Amiot & de la Sablonniere, 2010, p. 40). In so doing, dual identity individuals will become practiced at the integration of inconsistent ideas – a psychological process that has been associated with conceptual expansion.

Finally, over time, individuals will gain more knowledge of and form interpersonal links with the new group, leading to the broadening of their self-definition. Amiot and de la Salbonierre (2010) capture the essence of this relationship and what it means for identity incorporation: “a ... way for the immigrant to integrate her different social identities would involve identifying with a superordinate social identity - such as being human or being a “world citizen,” which would be highly inclusive and would incorporate the multitude of more specific identities she

possesses.” (p. 41). This inclusive way of thinking, we argue, will allow dual identity individuals to more easily recruit ideas from a wide conceptual network, increasing their likelihood of finding creative problem solutions.

### **Recommendations for Future Research**

The model presented in this paper may help develop specific, targeted tests of the cognitive consequences of dual identity processes. It can give us an indication of when, in the time-course of the dual identity experience, and in what individuals, increased set-switching, inconsistency resolution, and broad recruitment of ideas can be observed. For instance, researchers could ask about the extent to which the individual has maintained a sense of their home culture while living in the host culture, and the extent to which the two cultures are similar versus different (overlapping versus distinct). These dual engagement and cultural distance criteria should positively predict creativity. Relatedly, measures of common in-group identity are readily available from the literature on identity integration and can be used to obtain convergent evidence for the use of a wider base of ideas at later points in the time-course of adaptation (e.g., Roccas & Brewer, 2002; Geartnier & Dovidio, 2000; Benet-Martínez & Haritatos, 2005).

Knowing what changes occur during dual identity adaptation may not just explain why boosts to creativity occur, but can illuminate other consequences of multiple group membership, that go beyond creativity. For instance, researchers could investigate whether dual group membership that involves frame switching, leads to improved simultaneous language interpretation, switching between driving on the left vs. right side of the road, or any other types of tasks that entail rapid change between multiple mental operations.

### **Dual identity development**

Even though the model clarifies many issues and integrates several research threads, many questions remain unanswered. We discuss these issues in the paragraphs below. We begin by asking about the nature of dual identities and their cognitive development.

**Operationalizing dual identities.** Dual identities are studied from many angles: the psychology of multiple-, multicultural-, and bicultural identities, but also research on bilingual or multicultural adaptation. Cumulatively these studies indicate that experiences that involve exposure to, and deep engagement with a new group can increase creativity. However, it should be noted that various types of multicultural experiences are correlated, and isolating these processes in cross-section studies is very difficult. The clearest example is bilingualism and biculturalism: Most bilingual (vs. monolingual) participants are also bicultural (vs. monocultural). In other research, dual identities are often correlated with multicultural experience. For instance the Multicultural Experience Survey (Leung and Chiu, 2010) inquires about aspects of bicultural identity development (parents' cultural background, time spent living abroad) alongside being exposed to multicultural experiences (exposure to foreign food or music, social bonds). These issues are inherent to cross-sectional research, however to gain a deeper understanding of the dual-identity–creativity link, it is important to develop methods and measures that can tease apart the psychological impact of different diversity experiences. Importantly, precise measurement would allow researchers to better understand the different samples that they are working with, and develop more detailed conceptual models. For instance, while studies have shown that merely living abroad can increase creativity (Fee & Gray, 2012; Maddux & Galinsky, 2009), this outcome may be enhanced with advanced language proficiency (Kharkhurin, 2008) and the engagement of social identification processes

(Cheng, Sanchez-Burks, & Lee, 2008; Tadmor, Galinsky, & Maddux, 2012). This suggest that researchers working with cross-sectional data should develop a better understanding of the various properties of their samples: for instance depth, dual engagement, and cultural distance.

**Multiple group identifiers.** Alongside more precise measures of dual identity, further investigation is needed in to the effects of belonging to more than two social groups. In this review we suggested that boosts to creativity are likely to be observed when individuals possess *at least* two identities that are inconsistent with one-another. What happens when people have more than two identities remains unknown. One possibility is that if one were to manage more than two inconsistent identities, this would strengthen the observed effects, but only up to a certain point. First of all, crossed categorization research suggested that people can typically hold only two identities in working memory at any one time (Crisp & Hewstone, 2007), and this would mean that once two identities are already conflicted, the addition of a third identity would have a minimal impact over and above the addition of the second identity. Secondly, one can imagine that having too many identities would undermine depth, because with a large number of identities, there is a limit to how deeply individuals can engage with those identities. Perhaps this is why in the studies by Godart et al (2014) breadth and creativity had a curvilinear association: individuals who had lived in more than one country showed enhanced creativity, but once they had lived in more than three countries, creativity began to drop again. Future research should test these predictions utilizing different research samples, and various measures of dual identification..

**Many forms of culture.** Throughout the paper we talked of individuals who belong to two social categories that are incongruent with one another. From a

theoretical point of view, this made sense, as cultures are not limited to geographies and ethnicities, but extend to all groups and categories of people (Cohen, 2009): gender, profession, social status, or personal interest. However, the vast majority of studies reported in the present paper described the experiences of national or ethnic biculturals. One reason for this may be the prevalence of ethnic and national biculturalism in the world today. The number of international migrants has now moved beyond 190 million people (The United Nations, 2009), and many of these individuals have settled their families in the host country, raising a second generation bicultural children. However, given increased mobility across other social structures, understanding whether similar processes occur in gender counter-stereotypic individuals (e.g., female engineers), those who embrace new ethical systems (e.g., a Western Buddhist), or those who move up and down the social ladder (e.g., a working class academic), would greatly help us understand the nature of processes described in this literature.

One example, and perhaps one that we have not discussed throughout the paper, is of second language acquisition, in the absence of cultural exposure. Could this type of exposure also contribute to more creative thought? Some support to that idea can be found in the literature on bilingual education. For instance when Lambert, Tucker & d'Angeljan (1973) followed up Canadian elementary schoolchildren in a bilingual study program in Quebec, English-speaking pupils instructed in French (relative to their native English or French peers) demonstrated higher levels of creativity (Lambert et al., 1973). However, other studies suggest that when language is learned in isolation from the cultural environment, benefits to creativity are less profound (Kharkhurin, 2010b). Experimenters could attempt to establish to what extent, in the absence of a second cultural base, mere bilingualism could lead to

superior set switching and creativity. A test like that could relatively easily be conducted in multilingual countries – Canada, Belgium – where bilingualism is imposed by the education system and political structures, but the two languages are (relatively) low in cultural distance.

**Switching, integration, and inclusion.** Our dual identity model outlines three stages of dual identity adaptation, and explains how these stages influence creativity. Future research should try to establish to what extent, and in what way particular processes outlined in the model compliment and build onto each other. For instance as individuals adapt to possessing a complex self-definition, one may expect them to be more likely to frame-switch, rather than integrate or form an inclusive identity. However, even at the inclusive stage, individuals are still bound to experience frame-switching in those domains where this strategy remains most adaptive. For instance, after 20 years spent in the U.S. a Chinese immigrant may have developed a broad identity, and may be displaying behaviors indicative of cultural blendedness via their lifestyle, beliefs or dress. However, they will still continue to switch languages or certain cultural norms when the context deems it appropriate, and since having developed extensive practice, they may be more proficient at it, than individuals who had not developed a blended identity. Consistent with this idea, individuals high in identity integration, tend to assimilatively switch more, compared to individuals low in identity integration (Mok & Morris, 2010). This means that the competencies or skills acquired at a previous stage do not necessarily dissipate with the next stage. They may rather build onto each other, leading to a broadening of the behavioral repertoire of the diversifying individual, and resulting in cumulative improvements in cognitive performance. Future studies may attempt to more carefully test these ideas.

### **Boundary Conditions**

The idea that possessing two or more social identities can boost creativity is a relatively new thought, and studies begin to suggest that such effects are warranted by a number of prerequisites. Future research should help more precisely describe under what conditions possessing dual identities leads to increased flexible and creative thought.

**Relations between depth, dual engagement, and cultural distance.** First of all, we need to better understand how the three prerequisites of dual identity adaptation – depth, dual engagement, and cultural distance – interact with one another, and what constellations of these factors are needed to bring about creativity. In real life, dual engagement will often imply cultural distance, as two groups that one belongs to are bound to be different from one-another, even if just a little. This suggests that dual engagement and cultural distance should be positively correlated. However, their correlation with the third prerequisite - depth - may depend on particular operationalisations of depth. If depth is understood as deep engagement with a group or culture (for instance high identification with both the home and host culture), it will negatively correlate with dual engagement and cultural distance, because lots of different groups will make it too difficult to deeply engage with either of their cultures. Things do however look different when we operationalize depth as the time spent in a culture (as we suggested in the introduction, time is also a form of depth, because with time individuals are more likely to develop interpersonal links and absorb the norms of a group). For example, when Godart and colleagues (2014) ran archival analyses of the lives of great fashion designers, they found a positive correlation of depth – operationalized as time spent abroad – with breadth. In that study, designers who had lived in many countries had also spent a long time living abroad. In our review, we have discussed both length of stay abroad, and processing



depth, under one label because we believe that both can lead to the same outcome – they allow individuals to get to know the new group/culture really well, and though that, can contribute to superior creativity. However, to really understand the dynamic of this relationship, and how that dynamic brings about superior creativity, researchers should attempt to more precisely measure various aspects of “depth”, considering both the time of exposure to one group or culture, as well as ones’ psychological engagement with that culture.

**Drawbacks of dual identification.** A separate question is one about the various consequences of dual identity dynamics that may offset the benefits discussed in our paper. Embracing dual identities brings not only benefits; it can also associate with tangible difficulties in various areas of life: cultural misunderstandings and differences of perspective (Morris & Leung, 2010), adverse linguistic effects (Zhang, Morris, Cheng, & Yap, 2013) acculturation stress, low power positions, or increased levels of experienced prejudice. These types of negative consequences may offset individual creativity gains acquired via dual identity adaptation. Future research should investigate to what extent the effects of dual identity adaptation are qualified by such factors (e.g., see Chua, 2012).

### **Painting the bigger picture**

Two further inquiries can help us extent the current work beyond what is know and what is being research. First of all, it’s worth mentioning that because the current paper focuses on individual-level creativity, it does not consider an alternative route through which dual identity experiences can boost creatity. Even though this perspective may be played down in psychological research, creativity is often a social process: it occurs in groups of people, and involves exchanges of ideas and thoughts between and within social groups. Therefore, it is important that future studies

investigate how dual identity individuals perform within and between teams, and whether their improved ability to switch, integrate and include can contribute to better creative outcomes on the group level (e.g., Cao, Galinski, & Maddux, 2014; Chua, Morris & Mor, 2012).

Related to that, it is worth asking whether the effects observed in the literature result from possessing two or more social identities, or from a decreased reliance on one social identity only. Tadmor and colleagues have shown that improvements to integrative flexibility and creativity are observed not only in highly identified biculturals, but also in marginal individuals – those who do not identify with either of the groups that they belong to. This could suggest that the dual identity-creativity links manifests a broader phenomenon, whereby creativity increases as a function of decreased reliance on one single identity. Consistent with this, social identities have been found to stifle creativity, when norms of those identities are associated with less creative outcomes, and when individuals' identification is high (Adarves-Yorno et al., 2006, 2007). Following from that finding, we can also imagine that when individuals rely on one identity only, this affects not only norms, but also information accessibility. Perhaps then, any identity structure that does not entail high identification with one culture only (e.g., developing personal, rather than social identities, possessing dual social identities), can make people more creative.

### **Contributions to the Multiculturalism Debate**

Our model integrates notions of multicultural adaptation from cross-cultural and bilingualism literature, with cognitive models of category construal and intergroup relations. While the review focuses on cognitive outcomes, this integrated approach may also make an important contribution to the “multiculturalism debate” (Mendoza-Denton & España, 2010; Plaut et al., 2009; Verkuyten et al., 2010). Is dual identity a

good thing? Should politicians, policy makers and the public, welcome our increasingly pluralistic society, or should they expect immigrants to assimilate, and become like everyone else? These questions have dominated scholarly, political and public discourse for the last 50 years (Lambert & Taylor, 1990; Rudmin, 2003; Schlesinger, 1992; Yinger, 1994). Our theoretical analysis contributes to this debate by explicitly linking models of bicultural identity adaptation development, with the creativity literature. The work we have reviewed shows that dual identity experiences *can* yield benefits for individuals and societies, and on a very real and important psychological, social and economic dimension – *creativity*, provided that individuals have the possibility to deeply identify, process, and interact with the cultures of both groups that they belong to.

Demonstration of the link between dual identity adaptation and creative thinking also feeds into specific debates on education policy. As Bowman (2010) notes, opponents of policies promoting multiculturalism argue that focusing on diversity in schools takes attention away from their true purpose - to foster academic excellence - because one comes at the expense of the latter (Rothman, Lipset, & Nevitte, 2003). The research described in our article stands in direct contravention of these views, and suggests that diversity is a critical component of academic attainment - and should be *fostered* in schools not only as personal and social education, but as an even more key part of the curriculum.

Finally, work that continues to elucidate the impact of dual identity development on creative thought, will not only provide scientific justification for multicultural policies, but provide new ways of looking at existing psychologically-informed interventions for promoting tolerance and positive intergroup attitudes. For instance, the theoretical analysis provided above suggests a new, beneficial outcome

for interventions based on an implementation of the *common ingroup identity* model. Not only can a focus on shared identities reduce tendencies to favour in-groups over out-groups, it may also help to advance individuals' propensity for innovation and original thought through tendencies to adopt a wide idea base, conceptual integration and frame-switching strategies. Uncovering these new, unforeseen benefits of such interventions poses a range of new research questions, and some exciting new routes for future research and practical application.

### Conclusions

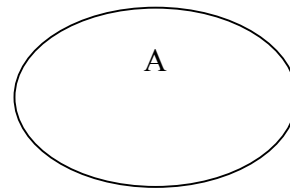
In this article we have aimed to gain a better understanding of how individuals perceive, construe, and represent their various group memberships, and how this relates to the development of creativity. Our analysis provided a new theoretical lens through which to understand, interpret, and predict benefits resulting from dual identity experiences; experiences that, we argue, are encapsulated in extant categorical models of social relations. This theoretical analysis may help us understand the link between creativity and dual identities in several important ways. First, it enables a better understanding of how people mentally construe their identities, and how the nature of that construal has implications, not just for efforts to reduce prejudice, but for individuals' creativity, innovation and original thinking. Second, it highlights a conceptual link between two hitherto largely independent, but intensely researched areas in psychology: the psychology of creativity, and the models of multiple social categorization and prejudice reduction. Finally, it informs debate on the value in diversity characterized by dual identities, by illustrating the potential benefits, not only for tolerance and harmony between social groups, but for the personal, professional and social well-being of individuals, groups and organizations.

**Acknowledgements**

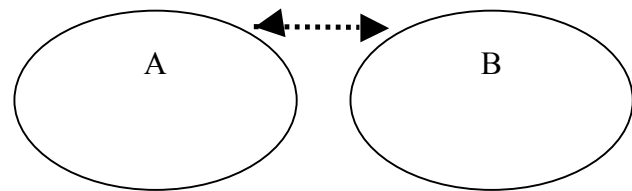
This research was supported by a Marie-Curie postdoctoral fellowship awarded to M. A. Gocłowska (FP7-PEOPLE-2011-IEF, 299852, CREA.DIV), and a British Academy Research Development Award (BARDA 47819) to R. J. Crisp. The authors would like to thank Matthijs Baas, Mariska Kret, and the three anonymous reviewers for their thoughtful comments on an earlier version of this manuscript.

**Group Membership****Use of conceptual categories**

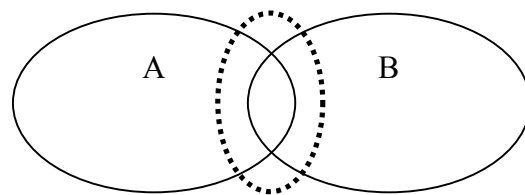
**Single:** access to information from once conceptual framework only.



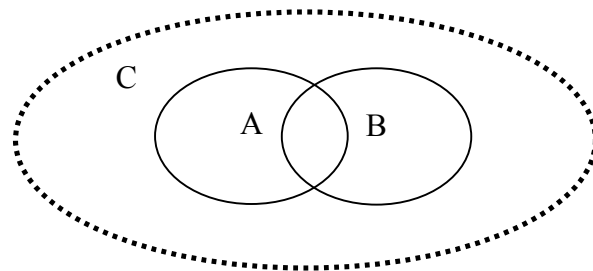
**1) Alternation:** there is only rapid access to information from identity A *or* B at any one time, but individuals become adept in *switching* between conceptual frameworks.



**2) Integration:** individuals need to resolve conceptual inconsistencies between identity A and B, and become, as a result, more adept at integrating inconsistent cognitions.



**3) Inclusion:** developing a broader self-definition (C) allows individuals to simultaneously draw from a broader range of ideas, decreasing reliance on more narrowly defined concepts constituent of identity framework A or B.



*Figure 1*

Dual identity affects concept use. People who belong to relatively uniform groups access knowledge structures associated with one group only. But managing two diverse identities allows individuals to practice novel cognitive skills involving (1) alternation of conceptual frameworks, (2) integration of inconsistent cognitions, and (3) increased inclusiveness.

Table 1: *Changes in creative performance resulting from dual identity experiences.*

Study	Sample	Measure of Dual Engagement	Outcome Variable
Fee & Gray, 2012	Australians and New Zealanders living in Asia, Africa or the Pacific.	Performance 12 months after departure > performance before departure.	Abbreviated Torrance Test (ATTA) overall creativity and flexibility.
Tadmor, Galinsky & Maddux, 2012	MBA students from a European (S1) or US (S2) university who have previously lived abroad.	Integrated > assimilated and separated international students.	Fluency, flexibility and novelty on the multiple uses task (S1) and rating of innovations at work (S2).
Kharkhurin, 2011	Arabic/Urdu/Farsi speakers living in the United Arab Emirates.	Bilinguals with high second language proficiency > moderate second language proficiency.	Originality and violation of invariants (typical features) in drawings of alien creatures.
Leung & Chiu, 2010	European American undergraduates.	High multicultural experience > low multicultural experience score.	Infrequent/original ideas for a gift (S2).
Kharkhurin, 2010a	Russian-English speakers and English speakers living in the US.	Ethnic bilinguals > monolinguals.	Nonverbal creativity on the ATTA.
Kharkhurin, 2010b	Russian-English speakers & English speakers living in the US; Farsi-English speakers living in the UAE and Farsi speakers living in Iran.	Ethnic bilinguals > monolinguals.	ATTA fluency, flexibility and originality.

Maddux, Adam, & Galinsky, 2010	Students from a European (S1) or US (S2) university who have previously lived abroad. Home and international students from a US university (S3).	Multicultural learning > control primes.	Overcoming activated solutions (S1), Remote Associates Test (RAT) performance (S2), Duncker-candle problem (S3).
Kharkhurin, 2009	Farsi-English Bilinguals living in the United Arab Emirates > Farsi Monolinguals living in Iran.	Ethnic bilinguals > monolinguals.	ATTA originality, increased violation of invariants (typical features) in drawings of alien creatures.
Maddux & Galinsky, 2009	International and American MBA students from a US university (S1 & S2),	Long > short time living abroad (S1, S2, & S4); Living abroad prime > control (S3, S5).	Insight tasks (S1, S2 & S4), RAT (S3), drawing alien creatures (S5).
Leung & Chiu, 2008	European American undergraduates.	High multicultural experience > low multicultural experience.	Fluency and flexibility on the unusual uses test; retrieval of non-normative exemplars.
Kharkhurin, 2008	Russian-speaking and English-speaking students at a US college.	Ethnic bilinguals > monolinguals.	ATTA fluency and flexibility.

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Table 2: *Cultural and cognitive switching in dual identity individuals.*

Study	Sample	Measure of Dual Engagement	Outcome Variable
Cultural frame switching			
Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennbaker, 2006	Spanish-English adult bilinguals living in the US.	Priming Hispanic/English culture via the use of language.	Responses on personality test in line with primed culture.
Hong, Morris, Chiu & Benet-Martinez, 2000	Westernized Chinese students in Hong Kong.	Priming American/Chinese culture.	Attribution style in line with primed culture.
Hong, Chiu & Kung, 1997	Westernized Chinese students in Hong Kong.	Priming American/Chinese culture.	Attribution style in line with primed culture (S2 & S3).
Bell, 1990	African-American career-oriented women working in a White US-majority culture.		Self-reports of compartmentalization and switching between cultures.
Cognitive switching			
Kharkhurin, 2011	Arabic/Urdu/Farsi speakers living in the UAE.	High > moderate second language proficiency.	Color-naming Stroop test.
Bialystok, 2010	In Canada, English speaking children and children who additionally speak a second language at home (e.g., Cantonese, Italian).	Ethnic bilinguals > monolinguals.	Global-local (S1, S2 & S3) and trail making task (s1, S2 & S3).
Prior & Macwhinney, 2009	US college students speaking English only, or speaking two languages continuously from the age of six (or earlier).	Ethnic bilinguals > monolinguals.	Reduced switching cost in a task-switching paradigm.

Martin-Rhee & Bialystok, 2008	In Canada, English speaking children, and children additionally speaking French, Chinese, Spanish, Hebrew, or Russian in their home.	Ethnic bilinguals > monolinguals.	Simon task (S1 & S2) and day-night Stroop task (S3).
Bialystok & Martin, 2004	In Canada, English speaking children, and children additionally speaking Chinese or French in their home.	Ethnic bilinguals > monolinguals.	Dimensional change card sort task (S1, S2 & S3).
Bialystok, Craik, Klein & Viswanathan, 2004	English-speaking Canadian adults, Tamil-English bilinguals living in India, Cantonese-English bilinguals living in Hong-Kong, and French-English bilinguals living in Canada.	Ethnic bilinguals > monolinguals.	Simon task.
Bialystok 1999	In Canada, English speaking children and children speaking English at school and Chinese at home.	Ethnic bilinguals > monolinguals.	Dimensional change card sort task.

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Table 3: *Identity conflict and conceptual integration skills in dual identity individuals.*

Study	Sample	Measure of Dual Engagement	Outcome Variable
Identity Conflict			
Walsh, Shulman, Feldman & Maurer, 2005	Non immigrant Israeli adolescents, and Russian-Israeli immigrant adolescents.	Immigrants > non-immigrants.	Conflicted sense of self.
Leong & Ward, 2000	Chinese sojourners in Singapore.	Higher contact with host nationals > lower contact with host nationals.	Identity conflict.
Phinney & Devich-Navarro, 1997	African-Americans and Latino-Americans in the US.	Blended (integrated) identity > separated and alternating individuals.	Increased perceptions of acculturation pressures (e.g., to be “more ethnic” and “less white”).
Conceptual Integration			
Maddux, Bivolaru, Hafenbrack, Tadmor & Galinsky, 2014	MBA students in an international environment	High multicultural engagement > low multicultural engagement	Increase (over time) in integrative complexity on the topic of multicultural cooperation
Saad, Damian, Benet-Martinez, Moons & Robins, 2012	Chinese-American students primed with a bicultural context	High > Low identity blendedness	Increase in fluency and originality of ideas on the brick task.

Tadmor, Galinsky & Maddux, 2012	MBA students from a European or US university who have previously lived abroad (S1 & S2). Israeli professionals working in the US (S3).	Integrated > assimilated and separated individuals.	Integrative complexity (S1-S3).
Tadmor & Tetlock, 2009	Asian undergraduates studying in the US (S1). Israeli professionals working in the US (S2).	Integrated > assimilated and separated individuals.	Integrative complexity (S1 & S2).
Benet-Martínez, Lee, & Leu, 2006	Anglo-American Monoculturals and Chinese-American Biculturals living in the US.	Biculturals > monoculturals.	Culture/landscape descriptions comparing and contrasting multiple perspectives (S1).
Cheng, Sanchez-Burks & Lee, 2008	Asian-Americans (S1) and female-engineers (S2)	High BII > low BII	More fluency and more originality on creativity tasks that enabled people to draw ideas from both their identities.

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Table 4: *Breadth of identification and breadth of idea sampling in dual identity individuals.*

Study	Sample	Measure of Dual Engagement	Outcome Variable
Breadth of Identification			
Spannring, Wallace & Datler, 2008	Europeans with high and low European mobility experiences.	High > low mobility experience.	Development of a European identity.
King & Ruiz-Gelices, 2003	British students who lived (or not) abroad for 1 year.	Living abroad experience > no living abroad experience.	Belonging to a “European cultural space” & possessing a “partly-European” identity.
Der Karabetian & Balian, 1991	Armenian ethnic minority members attending a Turkish (or Armenian) school in Turkey.	Engagement with majority > minority culture education.	Higher-order “Turkish” and global “human” identity.
Breadth of Idea Sampling			
Leung & Chiu, 2010	European American undergraduates.	High multicultural experience > low multicultural experience score.	Sampling sayings from foreign cultures (S3 - S5).
Hadis, 2005	US students who did (before and after) and did not spend a year studying in Europe.	Living abroad experience > no living abroad experience; Living abroad experience > before departure.	Interest in international news and politics; knowledge of the politics, geography and economics of the visited country; frequency of travel abroad; participation in foreign cultures.
Kehl & Morris, 2005	Students participating in a semester-long or short-term study abroad program.	Longer stay abroad > shorter stay abroad.	World-mindedness scores (favoring global concerns over national interests).

Zhai & Scheer, 2004	Students with various degrees of contact with individuals from other countries.	More > less contact.	Global perspective & positive attitudes towards diversity.
Medina-Lopez-Portillo, 2004	Students who participated (or not) in a study abroad program.	Post > pre departure.	Intercultural sensitivity.
King & Ruiz-Gelices, 2003	British students who lived (or not) abroad for 1 year.	Living abroad experience > no living abroad experience.	Interest in European affairs.
Douglas & Jones-Rikkers, 2001	US students who participated (or not) in a study abroad program.	Living abroad experience > no living abroad experience.	World-mindedness scores (favoring global concerns over national interests).
Zorn, 1996	Students who participated in short or long study abroad program.	Long > short stay abroad.	International perspective.
Carlson & Widaman, 1988	US students who spent (or not) their junior year abroad.	Living abroad experience > no living abroad experience.	International political concern and increased cross-cultural interest.

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