NEUROSCIENCE AND PEACEBUILDING:
REFRAMING HOW WE THINK ABOUT CONFLICT AND PREJUDICE

March 5, 2015

ABOUT THE REPORT
This report summarizes discussion and findings presented at a conference organized by the El-Hibri Foundation (EHF), Beyond Conflict (BC) and the Alliance for Peacebuilding (AfP). The conference was held at the El-Hibri Foundation in Washington, DC on January 21-22, 2015 and was attended by neuroscientists, experimental psychologists, peacebuilding practitioners, policymakers and others interested in how human brain functions shape conflict, identity formation, prejudice and peacebuilding. The purpose of the conference was to highlight relevant issues uncovered by neuroscientists and psychologists about behavior and conflict through their research focused on the brain; to identify issues of common interest to the neuroscience and peace building communities and the donors that fund them; and to promote greater collaboration between these communities going forward.

Melinda Burrell (independent researcher) and Judy Barsalou (retired EHF President) prepared this report. The conference operated on the basis of non-attribution "Chatham House rules," with only panel presenters associated by name with their comments.

ABOUT THE CONVENERS
The El-Hibri Foundation is a private foundation based in Washington, DC that seeks to build a better world by embracing two universally shared values of Islam: peace and respect for diversity**.** The Foundation supports peace education and interreligious cooperation through grants for promising groups, awards that recognize leadership and programs that promote learning and bridge-building.

Beyond Conflict assists leaders in divided societies struggling with conflict, reconciliation and societal change by facilitating direct contact with leaders who have successfully addressed similar challenges in other settings. Beyond Conflict realizes its mission through two types of programming: in country programs and thematic initiatives that address global challenges to peace and reconciliation. In 2012, Beyond Conflict launched the Neuroscience and Social Conflict Initiative, which seeks to utilize recent advances in the cognitive sciences to better address conflict and reconciliation around the world, in partnership with MIT.

The Alliance for Peacebuilding is a global membership association of nearly 100 peacebuilding organizations, 1,000 professionals, and a network of more than 15,000 people developing processes for change in the most complex, chaotic conflict environments in the US and around the world.

KEY FINDINGS
A revolution is currently taking place in brain science. With recent access to new technologies, leading neuroscientists are putting the most sophisticated tools available to the task of understanding how the

brain processes experience in ways that shape tendencies toward cooperation or confrontation. As a result, there is a growing body of research and an emerging understanding of the neurobiological underpinnings of key processes and experiences, such as fear, trauma, bias, memory, empathy, exclusion and humiliation, many of which are driven by unconscious cognitive processes. These findings offer a new framework or lens for addressing persistent challenges faced in conflict resolution, reconciliation, peace-building and diplomacy. Key findings discussed at this meeting are summarized below:

- ***Human behavior is largely driven by emotions:***
  - Recent research challenges the prevailing belief that human action results primarily from rational thought processes. At our core, we are emotional beings who behave rationally primarily when we feel secure and validated.
  - Fear, which is largely regulated by the amygdala, affects intergroup dynamics and the tendency to embrace the use of violence in response to a perceived threat.

- ***Individuals are largely unaware of how their brains respond to the surrounding environment:***
  - Our brains use automatic systems influenced by norms or decision-making rules, in part because the brain has limited cognitive ability. Behaviors such as prejudice, stereotyping and dehumanization reflect these unconscious brain processes.
  - We process information rapidly, using a variety of biases and heuristics, independently of the rational processing of information. How we perceive an "out" group different from our own is more influenced by affective (or emotional) processes than by cognitive processes.
  - Individuals' awareness of their own bias may help them reduce its power; it appears to be possible to intentionally "re-wire" the brain by exposing it to "positive exemplars" that contradict negative stereotypes.

- ***Humans have the capacity to empathize with and "mentalize" (think about) the feelings and beliefs of other, but we experience our own thoughts and emotions as the most real and salient/first and foremost.***
  - Mentalizing, in short, inevitably leads to some level of dehumanization when thinking about others.
  - Humanization of others is not automatic but can trigger a sense of empathy and interdependence between or among individuals and groups.
  - Often "hair triggers" are sufficient. We can be easily primed, without our conscious awareness, for both pro-social and anti-social behavior.

- ***Social norms strongly influence human thought and behavior:***
  - We are highly social beings, taking our cues from the social norms evident in the behavior of others, and we expect reciprocity.
  - Compared to individual attitudes, social norms are equally important, if not more important, influences on behavior.
  - Efforts to change behavior are more likely to be successful if they reflect subtle understanding of prescriptive norms and the brain's unconscious processing of messages.
  - Effective messages are those that are relevant to the identity of the person being targeted and that indicate the relationship between a widely practiced social norm and the desired behavior.

- ***Group identities are simultaneously lasting and malleable*:**
  - o   Individual and group behavior is highly influenced by group identity. Our brains are hard-wired to cooperate within "our" group while competing with other groups.
  - o   We are quick to form and identify with groups, regardless of situation.
  - o   Broadening the definition of "we"—that is, encouraging conflict protagonists to construct more inclusive identities—is one strategy to potentially reduce conflict. For peace builders, group identity defined around the use of violence suggests the need to reformulate that identity.

- ***Stereotyping is largely driven by an unconscious assessment of threats*:**
  - o   Managing rather than eliminating stereotypes may be a more realistic goal. Reducing stereotypes is aided by counter-intuitive exemplars and heterogeneous images of the "out" group.
  - o   Purely positive images of a stereotyped group can reinforce existing, negative stereotypes of that group.
  - o   Given the influence of social norms, prejudice reduction needs to take into account the full complexity of the environment that acts upon individuals, ranging from influences from within the family and the local community to messages purveyed by policymakers and the media.

- ***Human behavior is also influenced by so-called "sacred values"—deeply held beliefs or taboos that often have nothing to do with religion:***
  - o   In conflict situations, understanding how communities and individuals define their own sacred values is crucial.
  - o   Sacred values are malleable under the right circumstances.
  - o   Symbols and symbolic acts, such as public apologies, pertaining to sacred values powerfully affect conflict and conflict management. For example, apologies and other non-material incentives, can lead to flexibility around sacred values.
  - o   Even the most extreme believers can show flexibility if a symbolic gesture is offered by the other side, especially if it represents a sacrifice for that side or a significant compromise that benefits many.

- ***Peacebuilding efforts can easily backfire if they only rely on intuitions and ignore the underlying drivers of human behavior:***
  - o   Peacebuilding programs can have unintended consequences when they fail to account for how unconscious brain processes interact with conscious awareness to shape our behavior.
  - o   Awareness of how the brain works can help peace builders design programs that create "safe" environments that foster circumstances conducive to re-humanizing enemies and reducing conflict. Essential elements include addressing power asymmetries, producing interactions where participants feel their grievances are heard and their perspectives are understood, reducing humiliation and anticipating competing, negative messages.
  - o   While building trust can be important, it may be best to focus first on breaking down biases and engaging in perspective-taking, rather than prioritizing improved personal relationships.
  - o   Many "contact" programs are successful in building trust among their participants. However, if the newly sensitized participant returns to his or her home community

and has negative interactions with a member of the other group, he or she may feel betrayed and develop even deeper animosity towards the group.
- o Few peacebuilding programs incorporate effective evaluations based on randomized samples and control groups that provide insights into what primes human behavior and which strategies work.

PRACTICAL NEXT STEPS

Participants offered the following suggestions:

- *Identify priority research topics*. Discussants argued for "asking the right questions," including involving intended beneficiaries in defining the questions. Specific issues identified included:
  - o How are apathy and antipathy created and mitigated, and what "triggers" an increased sense of interdependence with others?
  - o What enables people to develop or regain a sense of agency and the ability to change, and how do some individuals overcome their fears and lead others?
  - o How are sacred values formed and fused with identity, leading individuals to engage in self-sacrificing behavior? How are they spread through social networks and influenced by symbols and symbolic acts?
  - o How can attitudinal change achieved at the individual level through contact programs be broadened to transform perceptions of and interactions between/among groups?
  - o How does post-traumatic stress disorder (PTSD) affect peace building, especially in societies where trauma is deeply entrenched and widespread?
  - o What is the relationship between domestic and international violence regarding threat, identity and underlying human dynamics?
  - o How are temporal aspects of peace building, including the need for "pausing" and the careful sequencing of activities, understood through a neuroscience lens?

- *Translate research findings into "actionable insights."* William Casebeer urged the need for an open system framework to capture and operationalize scientific research findings. Another participant suggested generating diverse case studies illustrating the benefits of using the cognitive sciences in peace building. One participant argued for building a new organization focused on research and education, especially on translating findings for non-specialists, particularly policymakers, who have the power to help shift norms. Efforts to initiate campus anti-rape and Islamophobia campaigns could be improved by neuroscience insights into messaging and norm creation. The operation of Obama's taskforce on police conduct in Ferguson and New York City, and the impact of secondary and tertiary effects of US policy toward ISIL might also be improved through neuroscience applications.

- *Promote active collaborations among new partners.* Seek engaged collaborations between NGOs needing help with program design and outcome measurement, on the one hand, and researchers looking for opportunities to undertake field research, on the other. Foster new online working groups to promote interaction. Casebeer offered access to his full suite of external sensing devices (physiological sensing, EKG, etc.) for research on the physiology of intergroup interactions.

- *Broaden the discussion to include others*, such as artists, gaming companies, child protection activists, monitoring and evaluation experts, religious leaders and development agencies, such as the World Bank. Expand the audience by organizing a hackathon on neuroscience and

peacebuilding. Create a Peace and Security Funders' Group (PSFG) working group and develop a related AfP website. Make sure to address a wide variety of audiences.

- **Analyze frequently used peacebuilding tools and integrate research findings into "best practices."** Focus on peace building activities designed to promote respect, relationships and resilience. Avoid viewing the neurosciences as providing a quick fix. Peace building is a long-term process, based on the creation and transformation of relationships, and it needs to take into account complex, structural differences in power, resources and context.

- **Apply neuroscience insights to other fields of practice**, such as transitional justice. Break down silos around analyzing and addressing historical memory, memorialization and trauma.

- **Educate the donor community** to increase resources available for this work, including funding "at scale." Encourage donor recognition of the long timeframe needed to produce sustainable results on the ground over years, not months, and stress the importance of evaluating key, unfolding processes versus short-term outcomes.

FULL DISCUSSION SUMMARY
I.   Research Insights About How the Brain Works

Tim Phillips asked, "What can people learn from the behavior of others?" He challenged the widespread belief that perception and behavior are highly differentiated according to context, noting that the neurosciences tell us that people respond to fear, humiliation, trauma and loss of agency in very similar ways around the world, regardless of context. Human beings everywhere share the same biological "operating system" and are wired for survival. Insights from neuroscience, he argued, are fundamentally reframing our understanding of what it means to be human and what drives human behavior.

Unconscious Processing

Bolstering Phillips' argument that we are emotional beings who act rationally only when we feel secure and validated, Emile Bruneau noted that humans are largely unconscious of how their brains operate. The brain is a modular processor (akin to a "Swiss army knife"), with different parts of the brain taking up and using information to perform tasks, some of which are beyond the consciousness and introspection of the individual. Illustrating this point, he evoked Jonathan Haidt's metaphor of the elephant and the rider (*The Happiness Hypothesis,* New York: Basic Books, 2006): A person is like a small rider sitting astride a powerful elephant, with the rider representing rational brain functions of which the rider is conscious. The elephant, on the other hand, is the larger, emotional part of the brain unreached by rational thinking that dominates action based on environmental stimuli and prescriptive norms. The rider believes that he or she is in control of the elephant, but that is an illusion.

Behavior is strongly and often unconsciously guided by messaging about prescriptive norms. For that reason, efforts to change behavior should reflect subtle understanding of prescriptive norms and how the brain processes messages about them. For example, an anti-rape campaign based on the statement that rape is a widespread practice on college campuses subtly sends the message that rape is an acceptable behavior. An anti-littering campaign that displays pictures of wide-strewn trash suggests that littering is a common practice. People will decrease their consumption of clean towels in hotels or the use of electricity in their homes if social messages on those issues indicate that restricted towel or energy use is widely embraced. "General" and "stereotyped" threats also unconsciously influence behavior. The latter, for example, can reduce performance on IQ tests for members of groups stereotyped as less intelligent. Fear and "disgust" amplify the sense of threat.

Neuroscience is still mapping out the brain's modular components, how they interact together, and the brain's malleable "plasticity." The brains of those suffering from post-traumatic stress disorder (PTSD) based on exposure to or participation in violent conflict show lasting physical deformations of the pre-frontal cortex.

Neuroimaging, a basic tool of neuroscience, provides insights into brain activity of which the individual is unaware—that is, it allows us to examine the elephant. Bruneau asserted, however, that experimental psychology offers the most immediate and accessible insights into what guides human behavior. Research methodologies employed by both fields are needed because together they help us understand that common sense interventions can have unintended consequences. Even efforts to evaluate the effect of an intervention through retrospective questioning may point to misleading conclusions, because unconscious processes of the brain may point to different, unexpected conclusions. For example, well-meaning programs designed to reduce ethnic stereotyping and bias may unconsciously reinforce bias, especially if they depict the "out" group as wholly good and undifferentiated.

"Mirroring" and "Mentalizing"
Adam Waytz argued that humanization and dehumanization are key to understanding our ability to relate to or empathize with others. Dehumanization involves seeing another person as "mindless," or somehow less than fully human. Two types of brain functions are important: "mirroring," which allows us to vicariously "experience" another person's mental state, feeling their pain or pleasure; and "mentalizing," a brain process that leads us to imagine or infer what another person is thinking. Mina Cikara noted that people tend to mentalize more about an "out" group they perceive as threatening, and do so less in relation to groups with whom they are not in competition. An individual's degree of social connection to a group affects their focus on their own group at the expense of others.

Humanizing others does not happen automatically. There are "triggers" that facilitate humanization and dehumanization as well as apathy or a sense of distance from others. Cikara defined apathy as an absence of feeling, but one that is very different from antipathy. She described outcomes from experiments focused on assessing others based on degrees of perceived "warmth" and "competence," with individuals mentally engaging more with those whom they perceive to be competent. Triggers relating to dehumanization relate to the other's perceived boundaries, borders and dissimilarities, as well as to their access to power and resources. Regardless of these factors, Waytz argued that we never experience others' emotions and minds as profoundly as we experience our own—a process that inevitably leads to some level of "dehumanization" when thinking about others. He suggested that future research should focus as much on apathy and antipathy as on the triggers that increase a sense of interdependence with others. Apathy toward others is influenced by dissimilarities between groups, their relative power and access to resources, and social connections within one's own group. Regarding apathy, Waytz quoted George Bernard Shaw: "The worst sin toward our fellow creatures is not to hate them but to be indifferent toward them; that's the essence of inhumanity." Behavior that is perceived as arrogance may reflect a person's fear, an insight that can foster different, more productive conversations about peace building.

Identity Formation
According to findings outlined by Cikara, identities are very "plastic" or malleable. Researchers now understand better how people form identities as members of groups, how identity affects cognition and behavior, and how identity can be manipulated or changed. People who identify with a group are easily swept up by its prescriptive norms, altering their behavior and memory; participants in riots often say, "I

don't know what came over me" as they unexpectedly found themselves joining the action. The brain chemical oxytocin powerfully affects identity and group formation.

Competition, Cikara argued, strongly affects mentalizing. Identifying with a group may cause an individual to reframe or justify their actions as serving the greater good, especially in a competitive context in which the only way for the individual or group to "win" is by harming others. An individual's own moral standards may be overridden by their identification with a group, but efforts to increase the salience of moral standards can decrease a tendency to justify or engage in violence. Research by Emily Falk reinforces the notion that an individual's experience is shaped by whether they are part of an "empowered" or "disempowered" group.

Expanding on the above, Linda Tropp explained that when people think of themselves as group members, they tend to exaggerate differences and create more rigid boundaries between groups. They also are motivated to preserve a positive image of their own group, give more resources to their own group, and ascribe more positive interpretation of behavior and intentions to their own group. Exacerbated by perceived threats during uncertain times, these group processes are strengthened by unity within groups and by long-term legacies of conflict.

Anonymity as a group member mitigates a sense of personal responsibility. The "bystander effect" relates to a group's diffused sense of responsibility until one person takes action, even at the risk of their own safety. That action can unlock the actions of others. Courageous individuals, sometimes inspired by others who behaved similarly, can deviate from group behavior based on social norms that promote harm to others, acting on a moral precept. Examples of such acts include sheltering targets of genocide at the risk of personal safety. More research is needed to understand what triggers courageous behavior based on moral values promoting non-violence.

Sacred Values and Symbolic Gestures
Jeremy Ginges noted that conflicts can become more violent and intractable when protagonists possess "sacred values"—deeply held beliefs or taboos that often have nothing to do with religion. He noted that humans often ascribe monetary value to things, but some issues cannot easily be reduced to monetary terms, and efforts to do so are considered taboo. He cited as one such example compromise over the status of Jerusalem, which caused participants in one study to signal increased support for violence when material goods were offered as an incentive for giving up Jerusalem, regardless of how the bargain was phrased or to whom the benefit accrued.

Ginges noted, however, that sacred values are not absolute, and even the most extreme people show flexibility if the other side offers a symbolic gesture, especially if it represents a compromise or sacrifice for the latter. Such symbolic acts can lead to flexibility when material bargaining will not. In terms of the Israeli/Palestinian conflict, the same people who showed support for violence when offered material goods demonstrated less "disgust" and "humiliation" and supported compromise if the other side undertook a powerful symbolic act – such as Israel apologizing to Palestinians or Palestinians in exile foregoing the right to return to Israel. Ginges noted anecdotally that the less powerful group (in this case, the Palestinians) is more likely to sacralize issues, but both sides tend to see themselves as victims.

Further discussion of sacred values included whether or not there is a perceived loss of status when a group is asked to give up something of sacred value to them, and if compromise is more likely if a similar compromise is asked of the other group. More research is needed, argued Ginges, who noted that offering to compromise on a sacred value may cause the contending group to devalue its importance.

II. Implications for Peacebuilding Practitioners

<u>Promoting Contact</u>

Thousands of peacebuilders have tried to reduce conflict by facilitating meaningful contact among conflict protagonists. "Contact theory" posits that sustained interactions among small groups can promote humanization, empathy and compromise.

To understand the effect of intergroup contact, Tropp conducted a "meta-review" of 515 studies undertaken between the 1940s and 2000 based on 713 independent samples, and concluded that they demonstrated a positive relationship between higher contact and lower prejudice. She cautioned, however, that the type of contact matters. Positive outcomes are the result of structured versus *ad hoc* contact moments and reflect efforts to promote equal status between the contact groups. Regarding groups with asymmetrical power, positive contact generally had less impact on members of the non-dominant group, but that changed somewhat when the program created close and meaningful relationships. Also, if a minority group had more positive contact with a majority group, the minority group tended to perceive lower levels of discrimination against their own group and expressed less desire to be involved in ethnic activism. Interestingly, positive contact with an "out" group produced more affective changes (how the groups felt about each other) versus cognitive changes (how they thought about the other), although positive contact also inclined groups to regard the others' intentions more positively.

In short, psychological processes associated with group membership can inform strategies to reduce, reframe or transform conflict. Understanding those processes can lead to the design of more effective contact programs. Many practitioners assume that contact + knowledge leads to reduced prejudice. In reality, lower anxiety and a reduced sense of threat produce less prejudice, as does increased empathy, because prejudice is based more on emotional processes than on rational thought. To reduce conflict between groups, therefore, encouraging perspective sharing and cooperative norms are important strategies. More broadly, prescriptive norms can be shifted through media campaigns, anti-bias education and efforts to reframe group identity, whereby people see themselves as part of a broader whole that promotes positive contact within the wider group as the norm.

Much discussion focused on changing norms relating to violence as an important goal for peace builders. We think about violence as doing harm, but in many contexts people regard those engaging in violence as self-sacrificing heroes. One goal of peacebuilding interventions could be to gain acceptance of new norms relating to heroism and self-sacrifice based on non-violent resolution of conflict.

Hal Saunders shared insights gleaned from years of peacebuilding practice in diverse settings. He stressed the power of extended interactions to transform relationships, and the importance of transforming relationships within the broader society, not just among government officials—something that takes years and multiple engagements. Enemies negotiating together can create a cumulative agenda for advancing peace. Over time, they develop a common body of knowledge about the issues at the heart of the conflict and how the other side views them, enabling them to solve problems together.

Saunders stressed the temporal elements of peacebuilding—the need to think in terms of years and even decades, versus weeks or months—devoted to the development of relationships and exploration of issues. He and others cautioned against being too efficient and "rushing to harmony." Saunders argued that if protagonists start getting along better immediately, the higher status group might decide there is no need to compromise, and the lower status group might not feel empowered to air their grievances. Protracted conflict puts more issues on the table while leading to multiple opportunities to

share information and promote transparency. In response, Cikara noted that research scientists largely ignore temporal aspect of peacebuilding, an issue that requires more study.

Salma Elbablawi speculated that programs aiming to improve understanding between two groups may be fundamentally flawed if they start by defining the groups in opposition to each other—such as "Westerners" versus "Arabs" or "Muslims." She argued that peacebuilding practitioners should learn more about triggers that help to humanize other groups and reduce negative stereotypes. Positive outcomes require sustained communication over time, opportunities for personalized experience by individual participants and efforts to promote equal status between the participants based on their group identity. All these aims are difficult to achieve, but one best practice is to have two groups collaborate on joint projects. Given the strong influence of the broader social environment and prescriptive norms, she argued that such programs need to address their goals from different angles and undertake comprehensive efforts that account for the full complexity of participants' social worlds—including friends, parents, social media and other influences.

If not carefully managed, contact programs can inflate expectations and worsen problems when they lead to perceived betrayal of newly established trust. Studies have shown that when contact group participants return home, interactions with a member of the other group—such as mistreatment at a checkpoint—can lead to feelings of betrayed trust. Program design needs to account for this possibility. Some argued that a primary goal of such programs should not be to engender trust but to create situations where disempowered groups feel they are "heard" and "acknowledged" by more empowered groups. In negotiations, compromise is less likely when one side perceives that it is being asked to give up something important before it is heard and understood.

Addressing Victimization, Psychological Trauma and Dehumanization

A lack of agency—when an individual or group feels unable to act—is related to a sense of victimhood. It may develop when a society is subject to long-term repression, reinforcing a sense of apathy that individuals can not influence their surroundings. Discussants agreed that more research is needed to understand when and how individuals and groups develop a sense of agency. Currently, programs to restore agency in such populations are largely political in nature, and their impact is not well understood.

There also was much discussion about the practical dimensions of dehumanization, including what it means to be dehumanized as an individual versus as a member of a larger group. Identities are malleable and can change quickly depending on context. Treating groups monolithically—seeing people not as individuals but only as members of their (stereotyped) group—is a form of dehumanization. Several discussed the important of exposing people to counter-intuitive exemplars from the dehumanized group—individuals who defy expectations about that group—in efforts to overcome stereotypes about the group. Well-intentioned programs may backfire if they depict the group as an undifferentiated mass. The "in" group is more familiar with itself and can dissociate outlying actions of an individual belong to that group, but it does not do so for "out" groups. This dynamic can create more radicalism if individuals are humiliated by perceptions about the bad behavior of an individual in their group. In this connection, discussants referenced the discomfort of ordinary Muslims called upon to apologize for the violent behavior of a few. One approach is to try to redefine the boundaries of the group, creating a larger "we," but flawed efforts may inadvertently reinforce existing group categories. Some discussants suggested it is better to break down biases that get in the way of rational thought processes rather than focusing on improving personal relations, which are subject to many unconscious influences. One suggested that changing individual attitudes may be the wrong target and, instead, we

should focus on building institutions that change social norms. Others argued that it is not so important if negative attitudes remain, as long as people engage in pro-social behavior.

Countering Islamophobia

Aaron Stauffer noted that anti-Islamic bias reflects multiple factors, and that efforts to reduce bias require identifying and working with the "moveable middle," not just "preaching to the choir." He agreed with Saunders that building relationships slowly, over time, based on sustained contact is key to success. The program "Our Muslim Neighbor" (OMN) depends upon involvement of a "backbone" organization that coordinates diverse actors working together on a common agenda based on mutually reinforcing activities; strong communication among the various actors; and the use of common standards and methods to evaluate progress toward mutually agreed goals. Stauffer indicated that OMN is seeking to foster change in peoples' perceptions and appreciation of each other, including their choice of vocabulary to describe Muslims. It also encourages shifts in homophily (the tendency for people to like and bond with "similar others") based on their social networks.

Alex Kronemer and Daniel Tutt argued for the power of positive storytelling. Literature, they asserted, can build empathy, but television and film do so even more powerfully. Accordingly, Unity Productions Foundation (UPF) produces films that focus on positive and unexpected representations of remarkable Muslims. Tutt reinforced an earlier point when he described a failed experiment conducted in a Paris suburb that strengthened negative stereotypes when it depicted an "out" group only through positive images. Attitudes about Muslims and Islam will change fastest through heterogeneous representations in media, television, film and other venues.

Dalia Mogahed argued that Islamophobia is a sort of "canary in the coal mine," because a loss of rights by Muslims presages a loss of rights by others. Approximately 80 percent of anti-Shari'a bills, she noted, are initiated by legislators who have actively sought to restrict the rights of other groups in the US. The greatest overlap with other issues is with strict voter ID laws (which limit voting), right-to-work laws (which undermine unions) and, to a lesser degree, with immigration, abortion and same sex-marriage rights. Mogahed noted that anti-Shari'a laws often are a smokescreen for other laws that are harder to pass, such as anti-abortion laws. The individuals promoting such legislation are a small group—only 13 percent of GOP leaders. To counter their efforts, she argued that Muslim Americans must educate themselves about the other linked issues, assess the larger political context, understand they are not isolated and make common cause with groups focused on linked rights. She added that survey data indicate that negative images of Islam are much stronger than negative images of Muslims.

There was much discussion here about how other ethnic groups, such as Irish Catholics, overcame prejudice. This provoked a debate: Stauffer asserted that the religious landscape is fundamentally different than it was 100 years ago because of "new structures of power." Philips argued that the challenges are not that different, because the human brain "hasn't changed in 35,000 years." One participant suggested that the framing of challenges is important: many conflicts that are not religious in nature, such tensions over land rights between animal herders and farming communities, are given the gloss of Islam and jihad. Islamophobia is not a helpful framework for analysis if political exclusion or inequality is the underlying problem.

Demonstrating Impact

Over the past 50 years, only a handful of large-scale studies have involved rigorous evaluation of contact group outcomes. Bruneau cited Betsy Paluck's review of hundreds of studies conducted over the past 50 years, and her finding that approximately only nine met minimal criteria for evaluation based on clear

definition of the contact groups and expected outcomes. Problematically, research about contact group outcomes rarely involves control groups or controlled comparison of different types of interventions.

Questions about problematic outcomes were raised in relation to significant investments in largely unsuccessful programs designed to address anti-Roma bias. Program design based on scientific understanding of how the brain functions is essential. First steps are to identify the key dimensions of the bias—how deep is the dehumanization of the "out" group, and aspects of empathy towards that group – as well as biases that lead to negative behavior which the project seeks to stop. Once those elements are determined, it is important to develop and test multiple interventions, randomly assigning people to each, to determine who responds well to which intervention. Some interventions might have a positive effect on some but not on others. The final step is to scale up successful interventions according to the target groups.

Assessing actual change can be challenging, and practitioners cannot assume that self-reported assessments by participants accurately reflect outcomes. Emily Falk's research demonstrates that brain imaging, not "self-reports," is the best way to identify public health messages likely to produce the desired change in behavior.

Researchers also noted that some critics argue that many research studies in psychology and neuroscience are biased because their subjects are largely "weird" (Western, educated, industrialized, rich, democratic) college students from a limited number of countries. In this connection, Bruneau noted that scientists should engage peacemakers in discussions about what it feels like to do their work, as these insights will allow scientists to better approximate reality in their studies.

Insights from Funders and Other Actors
Amber Story of the National Science Foundation (NSF) described their funding mechanisms, starting with the President's BRAIN initiative, which is creating new technologies (including conceptual and physical tools) for understanding brain function. She noted that NSF principally seeks to promote integration across scales (temporal, spatial) and across levels of analyses (molecular, social, affective, etc.). They are working with other agencies and countries, and looking for big thinkers whose ideas will gain wide acceptance and achieve impact.

Alexandra Toma of the Peace and Security Funders Group (PSFG) noted that it has 73 donor members working domestically and internationally, providing funding worth $300-400 million annually. PSFG seeks to increase members' knowledge of and connections within the field to enhance their grant making and amplify their public voice. PSFG also aims to increase funding for peace and security by explaining its importance to other funders and policy makers. Its focal areas include conflict and atrocities prevention; women, peace and security; nuclear control and disarmament; and understanding US budget allocations relating to peace and security issues. PSFG's theory of change stresses developing the next generation of talent, promoting advocacy and encouraging grassroots peacebuilding. Funding trends among PSFG members include supporting interreligious relationships/efforts, fostering innovation (especially by reaching out to others), promoting storytelling narratives relating to peacebuilding, and encouraging public/private partnerships.

William Casebeer (Lockheed Martin) discussed funding considerations prevalent in the security community, particularly the Department of Defense and the police.   Both, he argued are good partners when thinking about the full spectrum of challenges, including creating and maintaining peace, rebuilding community and trust, and transitioning from defense-dominated war-time governments to

sustainable, democratic governments led by civilians. Industry partners can bring resources and technology, such as Lockheed's integrated crisis early warning system—software that analyzes the "rhetorical environment" created by social media and facts on the ground in relation to social science theories of war. The Defense Advanced Research Projects Agency (DARPA) studies how to prevent actual and potential adversaries from surprising the US with new technologies, and, in turn, how to surprise adversaries. DARPA is interested in research that may involve failure but has great potential for achieving high impact. Their funding is "personality driven," so applicants should research the decision makers before pursuing support.

James Walsh discussed the report entitled *Mind, Society, and Behavior* (Washington, DC: The World Bank, 2015), which builds on the behavioral and social sciences as they relate to economic development. The *Report* notes a need for flexibility to adapt based on experience and reiteration and assumes that people: 1) have limited cognitive capacity and often rely on automatic systems partially driven by norms or decision making rules; 2) are highly social, requiring attention to norms and expectations of reciprocity; 3) rely on heuristics; and 4) use socially constructed mental models of the world to make decisions. The *Report* address how policymakers leverage social norms and intervene when mental models are dysfunctional (as when men think women cannot be leaders). It recognizes that making decisions in the context of poverty inhibits individuals' cognitive capacity because of stress and other factors. Optimally, decision-making should take place when conflict is at low ebb and conditions are less stressful.

Jerry White spoke of the need for a vision of systemic change with all of us "pulling in the same direction," including faith based organizations. We need to think about the language we use. For example, does widespread media coverage of foreign fighters joining the so-called Islamic State of Iraq and the Levant (ISIL) help "reset" norms and encourage others to do the same? We need to think about the power of sacred values and symbolic acts of leaders that have the power to change norms, such as when Princess Diana hugged an HIV/AIDS victim instead of avoiding contact to prevent infection. He delineated a framework for change and noted the need for transformational leaders who embody transcendent values and promote systemic shifts. Finally, White emphasized the importance of looking at different levels, actors and entry points, akin to diagnosing the phase of the cancer and determining the right sequence of steps to take with whom to enact a cure.

CONCLUSION
The presentations and discussions at the meeting left participants excited and invigorated. There was universal agreement that using a neuroscience lens as well as findings from experimental psychology offer new approaches and tools to address age-old problems related to conflict management and peace building. This includes building both an entirely new framework for understanding human behavior—one that is validated by science and provides many counterintuitive insights to managing conflict—as well as a new set of tools to better measure and evaluate the impact of conflict resolution approaches. Given the continuing prevalence of conflict around the world, there is an urgent need for practitioners, scientists, funders and policymakers to pay attention to the intersection of neuroscience and conflict.