
An IC Intervention for Post-Conflict Northern Ireland Secondary Schools

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Introduction

In the current and previous issues of this journal, articles have reported *Integrative Complexity (IC) Thinking* research results and pointed to future research directions to address security issues through educational, organisational, and community partnerships.¹ In this article, we present a research plan to develop a new integrative complexity intervention for a post-conflict context, Northern Ireland (NI) secondary schools, using the cross-culturally validated measure of integrative complexity. Integrative complexity measures refer to the absence or increasing presence of slower, open, flexible thinking (e.g., *from we're right, you're wrong toward I disagree with you, but see some validity in your view, and think we can find a way to work together for the sake of our children's futures*).² Over four decades of research has established the psychometric measure of IC with predictive values; a drop in or low integrative complexity among conflicted groups predicts more destructive or disruptive conflict, while increased IC predicts more peaceful outcomes to conflict.³ This proposed research in NI will increase understanding about increasing cognitive (and emotional) management capacities in post-conflict contexts, supporting pro-social collaboration among conflicted groups after decades of violence. Our findings will have implications not only for security in the wider UK, but in other post-conflict regions. By security, we refer to not only the absence of threats to physical or psychological safety and identities, but to a positive peace that promotes community psychosocial health.⁴ At the

¹ Jose Liht and Sara Savage, "Preventing Violent Extremism Through Value Complexity: Empirical Assessment of Being Muslim Being British," *Journal of Strategic Security* 6:4 (2013): 44-66, available at: doi:10.5038/1944-0472.6.4.3; Sara Savage, Anjum Kahn, and Jose Liht, "Preventing Violent Extremism in Kenya Through Value Complexity: Assessment of Being Kenyan Being Muslim," *Journal of Strategic Security* 7:3 (2014): 1-26, available at: doi:10.5038/1944-0472.7.3.1; see also Boyd-MacMillan et al., Boyd-MacMillan, and Andrews Fearon and Boyd-MacMillan, *Journal of Strategic Security* 9:4 (2016).

² Gloria Baker-Brown, Elizabeth J. Ballard, Susan Black, Brian de Vries, Peter Suedfeld, Philip E. Tetlock, *Coding Manual for Conceptual/Integrative Complexity* (University of British Columbia and University of California, Berkeley, 1992), available at: <http://www2.psych.ubc.ca/~psuedfeld/MANUAL.pdf>.

³ See note 1 above; Peter Suedfeld, K. Guttieri, and Philip E. Tetlock, "Assessing Integrative Complexity at a Distance: Archival Analyses of Thinking and Decision-Making," in J.M. Post (Ed.) *The Psychological Assessment of Political Leaders: With Profiles of Saddam Hussein and Bill Clinton* (Ann Arbor: The University of Michigan Press, 2003), 242-276, available at: <http://www.worldcat.org/title/psychological-assessment-of-political-leaders-with-profiles-of-saddam-hussein-and-bill-clinton/oclc/51059267>; for more about the pros and cons of low and high IC, see Boyd-MacMillan et al, Andrews Fearon, and Boyd-MacMillan, *Journal of Strategic Security* 9:4 (2016).

⁴ Lynn Davies, "Security, Extremism and Education: Safeguarding or Surveillance?" *British Journal of Educational Studies* 64:1 (2016): 1-19, doi:10.1080/00071005.2015.1107022; see Davies, *Journal of Strategic Security* 9:4 (2016); Siobhan O'Neill, S, et al, "Towards a Better Future: The Trans-generational Impact of the Troubles on Mental Health," *University of Ulster for Commission for*

time of publication, we are hopeful for positive responses to funding applications and outline our partnerships and research plan to generate discussion about and support for research in post-conflict contexts.

Despite the 2006 Peace Agreement, sectarian conflict in NI continues.⁵ In May 2016, MI5 (UK government branch for internal security) increased the threat level from moderate to substantial for Northern Ireland related terrorism.⁶ The Department of Education in NI (DENI) promotes a culture of tolerance and reconciliation alongside improving the learning environment and fostering good relationships among teachers, pupils, and parents.⁷ Yet normal psychological processes can generate quick, closed, inflexible thinking about one's own and opposed groups, reinforcing and perpetuating sectarian beliefs and behaviours, unless future generations become aware of and equipped to manage these processes to respect and work pro-socially with difference.⁸ The IC Thinking Group has been funded four times to design and test in a range of contexts with a very diverse sample an IC-based intervention to tackle sectarianism in Scotland, and to adapt and test another IC-based intervention to prevent

Victims and Survivors (March 2015), available at:

https://www.researchgate.net/publication/280933415_Towards_A_Better_Future_The_Trans-generational_impact_of_the_Troubles_on_Mental_Health.

⁵ Richard Haass, *An Agreement Among the Parties of the Northern Ireland Executive on Parades, Select Commemorations, and Related Protests; Flags & Emblems; and Contending with the Past* (Belfast, Northern Ireland Executive, 2013), available at:

<http://www.peaceagreements.org/wggsite/generateAgreementPDF/id/900>;

“Sectarian Division “still deeply rooted” in NI,” *BBC News Northern Ireland section* (2012), available at: <http://www.bbc.co.uk/news/uk-northern-ireland-18076231>;

David McKittrick, “Sectarian Bullying Still Rife in Northern Ireland Workplaces: Catholics and Protestants Report Intimidation from Colleagues at Work in Trade Union Survey,” *The Independent* (May 19, 2012), available at:

<http://www.independent.co.uk/news/uk/home-news/sectarian-bullying-still-rife-in-northern-ireland-workplaces-7767064.html>.

⁶ Vincent Kearney, “Northern Ireland Terror Threat Level Raised in Great Britain,”

BBC News (2016), available at: <http://www.bbc.co.uk/news/uk-36267052>; Siobhan Fenton,

“What is the New IRA? Why has the terror threat been raised from Northern Ireland to Great Britain?” *The Independent* (May 11, 2016), available at:

<http://www.independent.co.uk/news/uk/home-news/what-is-the-new-ira-why-has-the-terror-threat-been-raised-from-northern-ireland-to-the-uk-a7024276.html>.

⁷ Department of Education, Northern Ireland, DENI, *Toward a Culture of Tolerance: Integrated Education* (TACOT: IC, 1998), available at:

<http://www.deni.gov.uk/index/about-the-department/8-admin-of-education-pg/policies-and-strategies/16-about-the-department-policies-and-strategies-tacotie-pg.htm>;

Department of Education, Northern Ireland, DENI, *Count Read Succeed: A Strategy to Improve Outcomes in Literacy and Numeracy* (March 22, 2011), available at: <https://www.education-ni.gov.uk/publications/count-read-succeed-strategy-improve-outcomes-literacy-and-numeracy>.

⁸ James Giordano and Diane DiEulis (Eds.) *White Paper on Social Cognitive Neuroscience Underpinnings of ISIL Behaviour and Implications for Strategic*

Communication, Messaging, and Influence (Washington, DC: A Strategic Multi-Layer Assessment (SMA) Office Periodic Publication, 2015), available at:

<http://www.birmingham.ac.uk/Documents/college-social-sciences/government-society/iccs/policy/influencing-islamic-state.pdf>.

extremism in Scotland, already tested successfully in England and Kenya.⁹ These interventions pioneered the development, piloting, and assessment of IC interventions. This proposed intervention for NI learns from these past successes while making significant theoretical and methodological advances.

To advance scientific understanding about increasing IC management capacities in a post-conflict context (predicting pro-social interactions among conflicted groups rather than ongoing polarisation), we have planned a thirty-nine month (three years, three months) research project with the most rigorous and systematic empirical design to date. Alongside IC measures (instrument described below under Assessment Method), for the first time we will use five behavioural measures: empathy, resilience, emotion regulation, implicit attitudes, and a negotiation task, each of which we hypothesise to be integral to IC management capacities.¹⁰ Initial resilience measures in Scotland from a small sample of IC intervention participants show a significant increase.¹¹ Including four other

⁹ Eolene Boyd-MacMillan, *I SEE! Scotland/ IC Thinking End of Year Report 2015-2016*, Tackling Sectarianism Programme, submitted to Community Safety Unit, the Scottish Government, April, 2016, and Eolene Boyd-MacMillan, *Final report on I SEE! Life Skills for a Changing Scotland project effectiveness empirical evaluation*, submitted to Community Safety Unit, the Scottish Government, 2015, Copyright Scottish Government and ICthinking@; Eolene Boyd-MacMillan, Sara Savage, and Simon Pellew, *A report on the effectiveness of the Being Muslim Being Scottish (BMBS) Pilot*, submitted to Scottish Preventing Violent Extremism Unit (SPVEU), June, 2015; Eolene Boyd-MacMillan and Sara Savage, *Effectiveness evaluation report on I SEE! Scotland in Graeme High School, Falkirk*, submitted to Community Safety Unit, the Scottish Government, May, 2014; Eolene Boyd-MacMillan and Sara Savage, *Report on 'I SEE! Life Skills for a Changing Scotland' course effectiveness empirical evaluation*, submitted to the Community Safety Unit, the Scottish Government, March 2016; Baker-Brown et al., "Coding Manual"; see also Boyd-MacMillan et al., and Boyd-MacMillan, *Journal of Strategic Security* 9:4 (2016).

¹⁰ For comparisons with pre-post empathy measures being used with an IC Thinking project in Bosnia, we will use the Interpersonal Reactivity Index (IRI), H. M. Davis, "A Multidimensional Approach to Individual Differences in Empathy," *JSAS Catalog of Selected Documents in Psychology* 10:85 (1980), available at: <http://fetzer.org/sites/default/files/images/stories/pdf/selfmeasures/EMPATHY-InterpersonalReactivityIndex.pdf>; for comparisons with pre-post resilience measures in Scotland, we will use the CD-RISC instrument: Jonathan R.T. Davidson and Katherine M. Connor, *Connor-Davidson Resilience Scale (CD-RISC) Manual*, available at: <http://www.connordavidson-resiliencescale.com/user-guide.php>; for emotion regulation, we will use: James J. Gross and Oliver P. John, "Individual Differences in Two Emotion Regulation Processes: Implications for Affect, Relationships, and Well-being," *Journal of Personality and Social Psychology* 85 (2003): 348-362, available at: <https://www.ncbi.nlm.nih.gov/pubmed/12916575>; for implicit attitudes, we will use: N. Sriram and Anthony G. Greenwald, "The Brief Implicit Association Test," *Experimental Psychology* 56:4 (2009): 283-294, available at: <http://faculty.washington.edu/agg/pdf/Sriram&Greenwald.BIAT.2009.pdf>; for the negotiation task, we will adapt: Mara Olekalns and Philip L. Smith, "Understanding Optimal Outcomes," *Human Communication Research* 26:4 (2000): 527-557, available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2958.2000.tb00768.x/abstract>.

¹¹ See Boyd-MacMillan et al., *Journal of Strategic Security* 9:4 (2016).

behavioural measures (as above, empathy, emotion regulation, implicit attitudes, and negotiation task) alongside resilience will increase our understanding of IC management and other forms of self-regulation in a post-conflict context. Also for the first time, we will have internal and external control groups, alongside formal observational reports from within and outside the school. Internal control groups will test for the generalisability of the test group attitudes to the wider school. The different observational reports will assess the generalisability of change to contexts outside the test environment. This project will also pioneer student peer facilitation with staff support, plus six-month and one-year follow-up measures. The layered evaluation strategy will increase the validity of our findings and their implications for other post-conflict regions and contexts.

Using a participatory action research approach, over two years we have assembled a research team from University of Ulster and University of Cambridge, and established partnerships with an umbrella educational council (NICIE) and its affiliate schools in three cities (Belfast, Coleraine, Derry/Londonderry) for the design and testing of the new intervention.¹² We have also formed an advisory board with the former CEO of NICIE, new UNESCO Chair in Globalising Shared Education, Director of Community Engagement at the Institute for Research in Social Science (University of Ulster), and Director of the Political Cognition Lab (University of Montana) who invented a software that provides computerised IC coding (as opposed to manual). Through these participatory relationships we have aimed to create a value chain exemplar for the social sciences from conceptualisation through to delivery for sustainability, thus increasing the potential security benefits (as above, understood as not only absence from threat, but community psychosocial health promotion).

Underlying theory

The IC Thinking Group's early IC interventions (Being Muslim Being British, BMBB; Being Kenyan Being Muslim, BKBM) targeted value based cognitive capacities via the concept of IC.¹³ Increasing participants'

¹² Action research includes many variations, five key elements are: participatory (whether in all aspects or specific parts of the research), co-learning environment with multiple ways of learning, reflective learning to empower and develop critical consciousness about systems and structures, practical and enabling process, and commitment to action (incite change), see Jessica Shaw, Kate McLean, Bruce Taylor, Kevin Swartout, Katie Queria, "Beyond Resilience: Why We Need to Look at Systems Too," *Psychology of Violence* 6 (1 January 2016): 34-41. doi:10.1037/vio0000020.

¹³ Philip E. Tetlock, "A Value Pluralism Model of Ideological Reasoning," *Journal of Personality and Social Psychology* 50 (4, 1986): 819-827. doi:10.1037/0022-3514.50.4.819.

capacities to access more of their own values enabled shifts from rapid, inflexible, closed thinking toward more deliberate, flexible, open thinking about themselves and others.¹⁴ Building on this initial research, the more recent IC intervention in Scotland was designed for very diverse demographics and linked IC capacities to increases in self, other, and systems awareness—metacognition, embodied cognition, social cognition—influenced by feedback loops that shape social identities and social ecologies.¹⁵ Two studies with one hundred and four participants in Scotland found significant impact with medium to large size effects, alongside significant resilience gains.¹⁶ All total, empirical assessments of fifty out of fifty runs of IC interventions, using pre-post testing, have found significant impact (increases in IC—more deliberate, flexible, open thinking—toward one’s own and opposed groups).¹⁷ Due to diversity in demographics and our commitment to action research (both requiring uncomplicated assessment designs with as low a burden for participants as possible), our assessment designs have been relatively simple to date. The time (over two years) spent building partnerships for this research plan will accommodate a more comprehensive assessment design to advance scientific understanding of the mechanisms at work in the measured changes.

Many social factors and personal experiences represent transition points for extremist violence, yet no one transition point predicts movement from beliefs to violent behaviors for all people.¹⁸ However, all extremist ideologies, defined as polarized positions on any ideological dimension, including political, religious, ethical, moral, philosophical, and ecological,

¹⁴ Baker-Brown, et al., “Coding Manual;” Liht and Savage, “Preventing Violent Extremism;” Savage, Kahn, and Liht, “Preventing Violent Extremism in Kenya.”

¹⁵ David Diamond, *Theatre for Living: The Art and Science of Community-Based Dialogue* (Victoria, Canada: Trafford Publishing, 2007); Giordano and DiEulis, “White Paper;” Boyd-MacMillan (2016, 2015).

¹⁶ See Boyd-MacMillan et al., *Journal of Strategic Security* 9:4 (2016).

¹⁷ Baker-Brown, et al., “Coding Manual;” Giordano and DiEulis, “White Paper”. Successes to date have led to international invitations to present our work to, for example, the *EC Education, Youth, Training Forum and Civil Society* (October 2105, follow-up in The Hague, April 2016), UNESCO House (November 2015), RAN Education and RANyoung (February, June, 2016), EU e-Twinning (September 2016), UK Department for International Development roundtable (November, 2016), UK Educational Psychologists (December 2016), Department of Education, Denmark (March, 2017).

¹⁸ Clark McCauley and Sophia Moskalenko, “Individual and Group Mechanisms of Radicalization” in *Protecting the Homeland from International and Domestic Threats: Current Multi-disciplinary Perspectives on Root Causes: The Role of Ideology, and Programs for Counter-Radicalization and Disengagement* (Washington, DC: Strategic Multi-Layer Assessment (SMA) Office White Paper in support of counter-terrorism and counter-WMD Periodic Publication, 2010), available at:

<http://www.brynmawr.edu/psychology/documents/McCauleyMoskalenko.pdf>; Davies, “Security, Extremism and Education”; Davies, *Journal of Strategic Security* 9:4 (2016).

feature simplified, rapid, inflexible, polarized black and white thinking.¹⁹ We are attracted to thinking complexity levels that match our own.²⁰ Thus, the common human experience of rapid, inflexible, closed thinking can render a person more receptive to extremist narratives and ideologies that can be used to justify acts and counter-moves of reprisal or violence against an opposed group.²¹ Social reinforcement occurs via closely overlapping group memberships (low social identity complexity) that reinforce a dominant social identity, for example, affiliations with a sport fan club, local pub, marching band, and social media chat groups that all reinforce Protestant or Catholic identities. In contrast, moving away from simplified, polarized thinking (low IC) via increased management capacities enables one to see more of the problem space and find links among differences. Socially, as a person recognizes and tolerates more diversity (complexity) within, and less overlap among, their own groups (increased social identity complexity), they see other groups with greater complexity, leading to more inter-group harmony and less destructive sectarian conflict.²² Students experiencing inclusive behaviors in or

¹⁹ Peter Suedfeld, Ryan W. Cross, and Carson Logan, "Can Thematic Content Analysis Separate the Pyramid of Ideas from the Pyramid of Action? A Comparison Among Different Degrees of Commitment to Violence," in Hriar Cabayan, Valerie Sitterle, and Matt Yandura (Eds.), *Looking Back, Looking Forward: Perspectives on Terrorism and Responses to it* (Washington, DC: Strategic Multilayer Assessment Office, Office of the Secretary of Defense, 2013), available at: <http://www.phibetaiota.net/wp-content/uploads/2013/08/Suedfeld-et-al.-2013-Can-Thematic-Content-Analysis-Separate-the-Pyramid.pdf>; on capacity to hold extremist views and perpetrate acts of violence, see Boyd-MacMillan and Boyd-MacMillan et al, both *Journal of Strategic Security* 9:4 (2016).

²⁰ Michael A. Hogg, "Uncertainty and Extremism: Identification with High Entitativity Groups Under Conditions of Uncertainty," in Vincent Yzerbyt, Charles M. Judd, and Olivier Corneille (Eds.) *The Psychology of Group Perception: Perceived Variability, Entitativity, and Essentialism* (New York: Psychology Press, 2004): 401-418, available at: <http://people.psych.ucsb.edu/sherman/david/Hogg.Sherman.etal.jesp.pdf>.

²¹ As far as we know, integrative complexity is the only empirically based predictive measure in the field of Preventing/Countering Violent Extremism (CVE), as communicated to IC Thinking academics by Counter Terrorism and CVE experts at the United Kingdom (UK) Home Office, United States Pentagon (SMA program), U.S. Department of State (CT Bureau), the Radicalisation Awareness Network (RAN) of the European Commission (IC Thinking is a member of the RAN 'pool of experts'), Local Government Borough Councils in the UK, and the Hedayah Organization, the global CVE think tank and training center (Abu Dhabi).

²² Sonia Roccas and Marilynn B. Brewer, "Social identity complexity," *Personality and Social Psychology Review* 6:2 (2002): 88-105, available at: <http://psr.sagepub.com/content/6/2/88.abstract>; Marilynn B. Brewer and Kathleen P. Pierce, "Social Identity Complexity and Outgroup Tolerance," *Personality and Social Psychology Bulletin* 31 (2005): 428-437. doi:10.1177/0146167204271710; Katharina Schmid, Miles Hewstone, Nicole Tausch, Ed Cairns, and Joanne Hughes, "Antecedents and Consequences of Social Identity Theory: Intergroup Contact, Distinctiveness Threat, and Outgroup Attitudes," *Personality and Social Psychology Bulletin* 35 (2009): 1085-1098. doi:10.1177/0146167209337037; Peter Suedfeld, "The Cognitive Processing of Politics and Politicians: Archival Studies of Conceptual and Integrative Complexity," *Journal of Personality* 78:6 (2010): 1669-1702. doi: 10.1111/j.1467-6494.2010.00666.x.

outside school show increased inclusivity across religious and ethnic lines, and challenge racism.²³

An increase in thinking complexity indicates a person is accessing more of their own values, e.g., being an independent individual, *and* belonging to a group. Wanting *both* independence and belonging fuels and motivates more complex thinking.²⁴ Thus, increased IC management capacities do not require people to change but to express more of their own values, avoiding defensive reactance among participants. While low and high IC each has pros and cons, the wide-angle lens of increased cognitive management capacities equips people to avoid reducing others to views on one topic or depriving them of backstories, not justifying all behaviour yet affirming the intrinsic dignity of all.²⁵ There are times when low IC is appropriate; if a vehicle is coming toward you at speed, move to safety.²⁶ Increased IC management capacities empower people with a wider range of response choices in the face of difference and disagreement.²⁷ Integrative complexity is not easily faked since the *how* or structure of thinking is held at a less than conscious level of awareness; participants cannot easily fake high IC by giving a right or socially accepted answer because the IC measures target the structure not the content of a statement.

Research design

Each of the three research hubs, Coleraine, Belfast, Derry/Londonderry, will involve one integrated school, two single identity Catholic schools, and two single identity Protestant schools. Single identity schools are more numerous than integrated schools.²⁸ Table 1 outlines each research phase (for each year) with research questions and expected results.

²³ Davies, “Security, Extremism and Education,” p. 11; Davies, *Journal of Strategic Security* 9:4 (2016); Siobhan O’Neill, S, et al, “Towards a Better Future: The Trans-generational

Impact of the Troubles on Mental Health.”

²⁴ See note 19 above; Shalom H. Schwartz and Klaus Boehnke, “Evaluating the Structure of Human Values with Confirmatory Factor Analysis,” *Journal of Research in Personality* 38:3 (2004): 230. doi:10.1016/S0092-6566(03)00069-2.

²⁵ Philip E. Tetlock, David Armor, and Randall S. Peterson, “The Slavery Debate in Antebellum America: Cognitive Style, Value Conflict, and the Limits of Compromise,” *Journal of Personality and Social Psychology* 66:1 (1994): 115-126, available at: <http://faculty.haas.berkeley.edu/tetlock/Vita/Philip%20Tetlock/Phil%20Tetlock/1994-1998/1994%20The%20Slavery%20Debate%20in%20Antebellum%20America.pdf>; see also Boyd-MacMillan et al., Boyd-MacMillan, and Andrews Fearon and Boyd-MacMillan, *Journal of Strategic Security* 9:4 (2016).

²⁶ Ibid.

²⁷ Ibid.

²⁸ Davies, “Security, Extremism and Education,” p. 12. The higher number of single identity schools and the achievements of the Sharing Education program—an educational network among single identity Catholic and Protestant schools in which

Table 1. Research Design Phase by Phase

Phase One (Year 1) All Hubs, All Schools:
Focus Groups 15 schools, Intervention, Assessment Instruments, Procedures, Pilot Groups
Pilot Groups 1–9; n = 72 (8 students x 9 schools) Sample per school: 4 students being trained for peer facilitation, 4 staff being trained to support students (intervention & measures) No External Control Groups Internal Control Groups 1-9; n = 72 (8 students x 9 schools) measures only
Research Questions: 1a: Does intervention effect measureable changes as expected? 1b: Are delivery guides adequate? 1c: Do assessment instruments elicit desired data without being overly burdensome? <i>Expected Results:</i> Measureable changes, some adjustments required to intervention, delivery, assessment instruments.
Phase Two (Year 2) All Three Hubs
1 Integrated school per hub: Test groups (intervention, pre-post measures) and internal control groups (pre-post measures only) 1 Catholic, 1 Protestant school per hub: External control groups (pre-post measures only)
<i>Research Question 1.</i> Do IC measures show significant increases post intervention (compared with pre intervention measures)? <i>Expected result:</i> Test Groups see ‘opposed’/‘other’ group with greater complexity, reducing disruptive conflict and supporting pro-social engagement. <i>Research Question 2.</i> How do empathy, resilience, implicit attitudes, emotion regulation, and negotiation task measures correlate with changes in IC?

students and teachers move between schools to take and give classes—are to be celebrated but do not necessarily indicate greater success than integrated schools. A range of factors may be involved. For example, single identity schools were established as part of the national school system in the 1830’s, while integrated schools began as a grass roots movement in the 1980’s (NICIE is now a non-departmental governmental body). This research aims to equip all school types, integrated and single identity, with a new resource for respecting and collaborating with difference. The design requires engagement among different school types without taking a stance for or against a particular school type. The Advisory Board includes the founder and Director of the Sharing Education program (the new UNESCO Chair in Globalising Shared Education) and a former CEO of NICIE. For more information on sharing education see <http://www.schoolsworkingtogether.co.uk>; for more information on integrated education see <http://www.nicie.org/about-us/integrated-education/what-is-integrated-education/>.

Expected result: Increases in empathy, resilience, emotion regulation; positive implicit attitudes toward ‘outgroup’; and improved peer-to-peer relations, correlating with gains in IC management.

Research Question 3: Do school staff report behavioral changes in categories a–d: a) reduction in disciplinary actions, b) improvements in academic performance, c) improved pupil-teacher relations, d) improved peer-to-peer relations.

Expected Result: Reports of positive behavioral changes in categories a–d. Integrative Complexity management gains are not a panacea, but increase the probability of positive changes in a–d, mitigated by each participant’s ‘starting place’ and other factors (e.g., mental health, home situation, life history).

Research Question 4: Do family members report positive behavioral changes at home?

Expected result: Family members report positive behavioral changes, in line with factors, such as stress or anxiety, that could affect family member reports (e.g., a participant may improve behaviorally, but the family member may be preoccupied, ill, or otherwise unable to recognize/report the improved behaviors).

Research Question 5: Do the three hubs show differences in IC scores, behavioral measures, self and observational reports (school, home)?

Expected result: Generally similar, variances possible due to historical, cultural differences across schools and hubs.

In all cases, expect test group results to show significant gains compared to control groups.

Phase Three (Year 3) All Three Hubs

1 Integrated, 1 Catholic, 1 Protestant, Each Hub

Test Groups 1–9 (3 hubs x 3 schools = 9) intervention and measures

Sample: One class year (10 or 11; ages 13 – 15); n = 225 ((25 students x 3 schools) x 3 hubs)

Internal control groups 1–9; n = 270 (((10 students x 3 classes) x 3 schools) x 3 hubs)

Measures only, to ensure group base-line attitudes are representative of wider school

1 Catholic, 1 Protestant each hub (NI has more single identity than integrated schools)

External control groups 1–6: 2 schools each hub; n = 150 (25 per class x 6 schools)

Measures only

Research Questions 1-5: as for Phase Two with the addition of cross test group comparisons for differences among school types as well as hubs
Expected result: generally similar, variances possible due to historical, cultural differences across schools and hubs.

Phase Four (first 3 months Year 4)

All three hubs, all schools with test groups

Test groups 1–9: 12 (approx. half/each test group); n = 108 (12 students x 9 schools)

Sample: one class year (10 or 11) aged 13–15; brief refresher, pre–post measures

Internal control groups 1–9: 12 (approx. half/each test group); n = 108 (12 students x 9 schools); no brief refresher, pre–post measures

Research Question 1. Do IC and behavioural pre and post measures show changes after time lapse and will changes vary according to amount of time that has lapsed?

Expected result: Possibly further gains or a decrease in IC and behavioural measures; magnitude may decrease as more time has lapsed.

Research Question 2: Do measures vary among schools and hubs?

Expected result: Generally similar, variances possible due to historical, cultural differences

Assessment Method

Sample Recruitment

Over two years, we have built partnerships with NICIE (former and current CEOs, Senior Development Officer), and with heads and staff of three NICIE affiliate secondary schools in Belfast, Coleraine, Derry/Londonderry. Each school has designated a staff member for project interface and has made space in their timetables and classroom allocations for all deliveries. All staff in each school will be briefed to support IC learning (phased so as not to interfere with testing when the intervention is delivered in a particular school). With the support of the current CEO of NICIE, we are working with the NI Education Authority, CCMS (Council for Catholic Maintained Schools), and the Sharing Education programme, to identify four Single Identity schools (two Protestant and two Catholic) per hub receptive to project involvement. Logistics will be worked out with Single Identity schools regarding involvement in focus groups and piloting of new intervention during Phase One (Year One). They will not receive test delivery of the new intervention until Phase Three (Year Three), to enable us to work out delivery bugs with

one test group per hub. As an incentive for administering control measures without the intervention (one-year delay as compared to integrated schools), the twelve Single Identity schools will receive one iPad per school. The schools that have had the intervention will support delivery in the final schools providing control groups in phase three; agreement to provide support is required for participation.

Assessment Instruments

Measuring IC: To date, IC Thinking interventions have used Paragraph Completion Tests (PCTs), anonymous written responses to four paragraph stems about self-identified in and outgroups used in research over four decades, and considered the gold standard of IC assessments.²⁹ We will advance the science of IC assessment by designing a new IC assessment instrument for varying literacy levels of secondary school students.

Participant responses to the new assessment instrument will be measured pre-post intervention for IC changes using the cross-culturally validated IC coding framework.³⁰ Twenty percent of the responses will be IC coded manually; we have access to at least five qualified IC coders. All responses will be coded electronically using *Auto IC* software, currently being piloted on other projects.³¹ Manual IC coding could be burdensome for this sample size, which is needed to advance our understanding of cognitive complexity and behavioural changes in post-conflict contexts. The sample size is also needed to test effectiveness of the new intervention in three different school types (integrated, single identity Protestant, single identity Catholic) in three cities across NI. Each city has a different legacy from the Troubles. As noted, the inventor of Auto IC is an Advisory Board member and we will work closely with him on our use of Auto IC.

Participants will be asked to prepare end of intervention oral presentations on what learning about IC has meant to them, what they are doing differently, and with what outcomes. These presentations will be audio recorded and then anonymised by the transcriber blind to conditions and participants. Depending on participant confidence, they may speak from notes, read aloud their responses, or respond in an interview format. Transcribed responses will be coded for IC as above (twenty percent manual, one hundred percent Auto IC). Presentations will

²⁹ See note 1 above.

³⁰ See note 3 above.

³¹ Luke Conway, Kathrene Conway, Laura Gornick, and Shannon Houck, "Automated Integrative Complexity," *Political Psychology* 35:5 (2014): 603-624, available at: <http://onlinelibrary.wiley.com/doi/10.1111/pops.12021/abstract>; Shannon Houck, Luke Conway, and Laura Gornick, "Automated Integrative Complexity: Unmet Challenges and Future Directions," *Political Psychology* 35:5 (2014): 647-659. doi:10.1111/j.1467-6494.2010.00690.x.

also serve as anonymised self-reports of learning. Behavioural measures will focus on empathy, resilience, emotion regulation, implicit attitudes, and negotiation, as described in Table 1. Observational reports via questionnaires designed for school staff and family members will assess specific behavioural changes outside of the test context, also described in Table 1.

Intervention design

IC Thinking interventions increase IC management capacities by promoting whole brain processing through an experiential and participatory design based on insights from neuro-science, pedagogy drawn from Theatre of the Oppressed and transformational learning, as well as social and neuro psychology.³² Typically delivered as eight two hour sessions (sixteen contact hours), participants experience how quickly in-group-outgroup biases can emerge, even in role-play.³³ They then experience moving from closed, inflexible (low IC) thinking toward open, flexible (high IC) thinking on debated hot topics using taught strategies (such as, finding shared underlying values, cherry-picking what is best from each viewpoint). The hot topics currently debated in NI will be identified with focus groups from integrated and single identity schools in each hub. Guided exploration of values and viewpoints on issues debated in their own communities enhances empathy and perspective taking for constructive engagement with opposition and disagreement (Catholics versus Protestants, or other opposed groups) without sacrificing own core

³² See suggested links between neuroscience and integrative complexity Boyd-MacMillan et al., *Journal of Strategic Security* 9:4 (2016); Sara Savage, "Head and Heart in Preventing Religious Radicalization," in Fraser Watts and Geoff Dumbreck (Eds) *Head and Heart: Perspectives from Religion and Psychology* (Templeton Press, 2013), available at: <https://www.templetonpress.org/book/head-and-heart>; see also, Mina Cikara and Jay J. Van Bavel, "The Neuro-science of Inter-group Relations: An Integrative Review," *Perspectives on Psychological Science* 9:3 (2014): 245-274. doi:10.1177/1745691614527464; McGilchrist, Iain, *The Master and His Emissary: The Divided Brain and the Making of the Western World* (New Haven, Connecticut: Yale University Press, 2009); Boal, Augusto, *Theatre of the Oppressed* (Sidmouth, England: Pluto Press, 2008); A. Boal, *Legislative theatre: Using Performance to Make Politics* (London: Routledge, 1998); John Merzirow and Associates, *Learning as Transformation: Critical Perspectives on a Theory in Progress* (San Francisco: Jossey-Bass, 2000).

³³ Henri Tajfel, "Social Psychology of Intergroup Relations," *Annual Review of Psychology* 33 (1982): 1-30. doi:10.1146/annurev.ps.33.020182.000245; Tajfel, Henri, *Human Groups and Social Categories* (Cambridge, UK: Cambridge University Press, 1981); Michael Diehl, "The Minimal Group Paradigm: Theoretical Explanations and Empirical Findings," in Wolfgang Stroebe and Miles Hewstone (Eds.) *Special Issue: European Review of Social Psychology* 1:1 (1990): 263-292, doi:10.1080/14792779108401864; Sherif, Muzafer, O. J. Harvey, B. Jack White, William R. Hood, and Caroline W. Sherif, *Intergroup Conflict and Co-Operation: The Robber's Cave Experiment* (Norman, OK: University of Oklahoma, 1961), available at: <http://www.free-ebooks.net/ebook/Intergroup-Conflict-and-Cooperation-The-Robbers-Cave-Experiment/pdf?dl&preview>.

values. Each session invites participants to create and inhabit new narratives in contrast with polarised narratives on offer after the Troubles.³⁴ These experiences shape imaginations with hope for a future where differences do not prevent collaboration and dysfunctional feedback loops are replaced by intentional loops co-created collaboratively in the face of difference and disagreement.³⁵ (The time-frame/delivery schedule will be standardised in partnership with our end-user partner schools.)

Conclusion

As demonstrated by the recent MI5 warning about NI related sectarian violence posing a substantial threat to the UK, post-conflict legacies can create security challenges to safety, identities, and community psychosocial promotion.³⁶ This research project offers the potential to reduce the threat of violence from such legacies through an education-based intervention developed through a value chain exemplar for the social sciences, from conceptualization through to delivery for sustainability. Supported by our Advisory Board, we will work with public bodies, policy-makers, and educators to expand the network of schools and students equipped to respect and work with difference in pro-social ways via wide rollout of this new evidence-based intervention in NI secondary schools. If less successful than anticipated, then increased understanding of IC management amongst secondary students and staff in a post-conflict context will generate further research and development, supported by increased social capital (strengthened relationships in school communities and amongst different school types across three cities, enhanced skills and self-awareness, experience of research processes and evidence-based resources). Experiencing interconnections in new ways, through the experiential, embodied learning in this new IC intervention, participants will emerge with richer understandings of their communities, leading to changes in relationships and behaviours.³⁷ Other post-conflict regions will also benefit from the new understandings generated by this research.

Our aspirational vision is to seed a Northern Ireland IC Centre and Network for ongoing research to resource schools and communities and collaborate with other post-conflict contexts. While there is no panacea for post-conflict peace-building, the approach developed in this research

³⁴ Davies, "Security, Extremism and Education," pp. 13-14; Davies, *Journal of Strategic Security* 9:4 (2016).

³⁵ See Boyd-MacMillan et al., *Journal of Strategic Security* 9:4 (2016); David Diamond, *Theatre for Living: The Art and Science of Community-Based Dialogue* (Victoria, Canada: Trafford Publishing, 2007), 16.

³⁶ See note 6 above.

³⁷ See note 21 above.

will contribute to that effort and support and compliment other approaches, making all efforts more effective long-term. A less divided NI will be a more secure, stable, prosperous region, attracting investment and further innovation for employment, social services, the arts, and scientific discovery. The vision of a Centre may transition into something more appropriate for NI. Meanwhile, our end user partners have been inspired already to expend much time and energy in laying the foundation for a successful project.