

On the Generalization of Intergroup Contact:

A Taxonomy of Transfer Effects

Rose Meleady<sup>1</sup>

Richard J. Crisp<sup>2</sup>

Gordon Hodson<sup>3</sup>

Megan Earle<sup>3</sup>

1 = University of East Anglia; 2= Durham University; 3 = Brock University;

Word Count: 2428 (target = 2500 max)

References: 30 (target = 40 max)

**Abstract**

The contact hypothesis proposes that bringing groups together under favorable conditions can improve intergroup relations. It is now well-established that intergroup contact can improve attitudes not only towards the outgroup as a whole but towards other, non-contacted groups (*secondary transfer effect*). We review evidence of a further, higher-order generalization effect whereby intergroup contact also impacts more general cognitive processes outside of the intergroup context (i.e. '*tertiary transfer effects*'). We present a taxonomy of transfer effects that explains these generalization effects as distinct outcomes of the contact process, yet contingent upon the same component process, specifically, the assessment of the *semantic distance* between the target (e.g. contacted individual) and the frame (e.g. group prototype). This conceptualization provides an explanatory framework for uniting the disparate forms of transfer effect in the contact literature, clarifying why primary and secondary transfer effects are facilitated by low semantic distance, and why contact is more cognitively demanding under conditions of high semantic distance (but with greater potential for cognitive growth).

Keywords: INTERGROUP CONTACT, PREJUDICE, SECONDARY TRANSFER EFFECT, COGNITIVE LIBERALIZATION

The intergroup contact literature describes the potential for cross-group interactions to improve social cohesion. Inspired by observations of the benefits of desegregation on racial attitudes, Allport's (1954) 'contact hypothesis' holds that encouraging interaction across group lines improves intergroup relations. This hypothesis is one of the most extensively tested ideas in psychology, with multiple meta-analytic integrations attesting to the robust, positive impact of intergroup contact on prejudice (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006). Across different implementations, participant populations, and bases for group membership, more contact is generally associated with less prejudice. The contact hypothesis has evolved into a sophisticated theoretical framework, more complex and complete than Allport's original formation, specifying how, when and why contact is associated with reduced prejudice (Hodson & Hewstone, 2013; Pettigrew & Tropp, 2011).

### **I. Generalization Within Intergroup Relations**

The central premise underlying intergroup contact theory is that positive interaction with an outgroup member, as a representative of their group, can reduce prejudice toward that specific *member* but also toward their group *as a whole*. Such generalization has been robustly supported (Brown & Hewstone, 2005), with effects strongest when the contacted person is considered typical of their outgroup and group memberships are salient. Van Oudenhoven, Gronenewould, and Hewstone (1996), for instance, asked Dutch participants to engage in a cooperative learning task with a Turkish confederate. In the high group-salience condition the experimenter made explicit reference to participants' ethnicities when introducing the task (highlighting their typicality). Afterwards participants evaluated their Turkish collaborator and Turks generally. Although the Turkish confederate was evaluated favorably across conditions, when the confederate's nationality was salient positive evaluations generalized to Turks generally. Similarly, in Britain Brown, Vivian, and

Hewstone (1999) found that member-to-group generalization was facilitated when an interaction partner was presented as typical (*vs.* atypical) of Germans.

More recently, research reveals that contact with member(s) of Group X also generalize towards outgroups (Groups Y, Z) not involved in the contact. This ‘secondary transfer effect’ (Pettigrew, 2009) concerns the ‘spread’ of positive group evaluations and reduced xenophobia. Using nationally representative data from four European countries, Pettigrew (1997) found that more contact with immigrant groups in the respondents’ home country predicted improved attitudes towards these groups but also toward immigrant groups generally absent from the host society. Later, Pettigrew (2009) observed that contact with foreigners predicted not only positive attitudes toward foreigners but toward gay and homeless people.

Research on this type of generalization provides evidence of an *attitude generalization* mechanism, whereby intergroup contact improves attitudes towards the contacted outgroup, which then spread to other, related attitudinal target groups (Tausch et al., 2010). For instance, Harwood and colleagues (2011) found evidence of a *stimulus generalization gradient* whereby attitudes towards the contacted outgroup generalized most strongly to secondary groups that are most proximal in a semantic network. Following positive imagined contact with an illegal immigrant, generalized attitude change occurred for groups independently rated as similar to illegal immigrants (e.g. Mexican-Americans, homeless people, political refugees), but not for dissimilar groups (e.g. Republicans, rival university students) (see also Pettigrew, 2009).

## **II. Generalization Beyond Intergroup Relations**

Intergroup contact benefits can extend even further, in the form of generalized cognitive flexibility, beyond the realm of intergroup relations – a process termed *cognitive liberalization* (Hodson, Crisp, Meleady, & Earle, 2018). Evidence can be drawn from

literatures not typically considered relevant for contact theory. A large literature in education, for instance, shows that cross-racial interactions are associated with heightened academic achievement. Developmental theorists emphasize that cognitive growth is fostered by discontinuity and discrepancy; ethnic diversity represents a source of multiple perspectives and may improve academic achievement by triggering more active and complex thinking (Bowman, 2010). Gurin and colleagues (2002) analysed a national survey of college students administered upon entrance and again four years later. Outcome measures included academic skills (e.g. analytic and problem-solving skills, writing skills) and measures of intellectual engagement (e.g. achievement drive, postgraduate aspirations). After controlling for factors that may predispose participation in diversity experiences (e.g. neighborhood and high school racial composition), interactions with diverse peers (but not learning about diversity via curriculum content) were associated with improvements in academic skills and intellectual engagement.

Evidence also comes from research on mixed-ethnicity cooperative learning groups, which were originally designed to reduce prejudice in elementary schools by encouraging interaction between children from different ethnic backgrounds. Slavin (1995) identified 52 studies measuring cooperative learning effects on student achievement. Teachers and classes were randomly assigned to cooperative learning or control conditions, or were matched on pre-test achievement level. Thirty-three studies (63%) found significantly greater scholastic achievement in the cooperative learning (*vs.* control) classes. Sixteen (31%) found no differences, and only three studies (6%) observed the control group outperforming the experimental group.

In the group decision-making literature there is evidence that culturally-diverse groups reject simple, immediately apparent solutions in favor of novel resolutions that incorporate multiple perspectives, thereby reaching higher quality decisions. Sommers (2006)

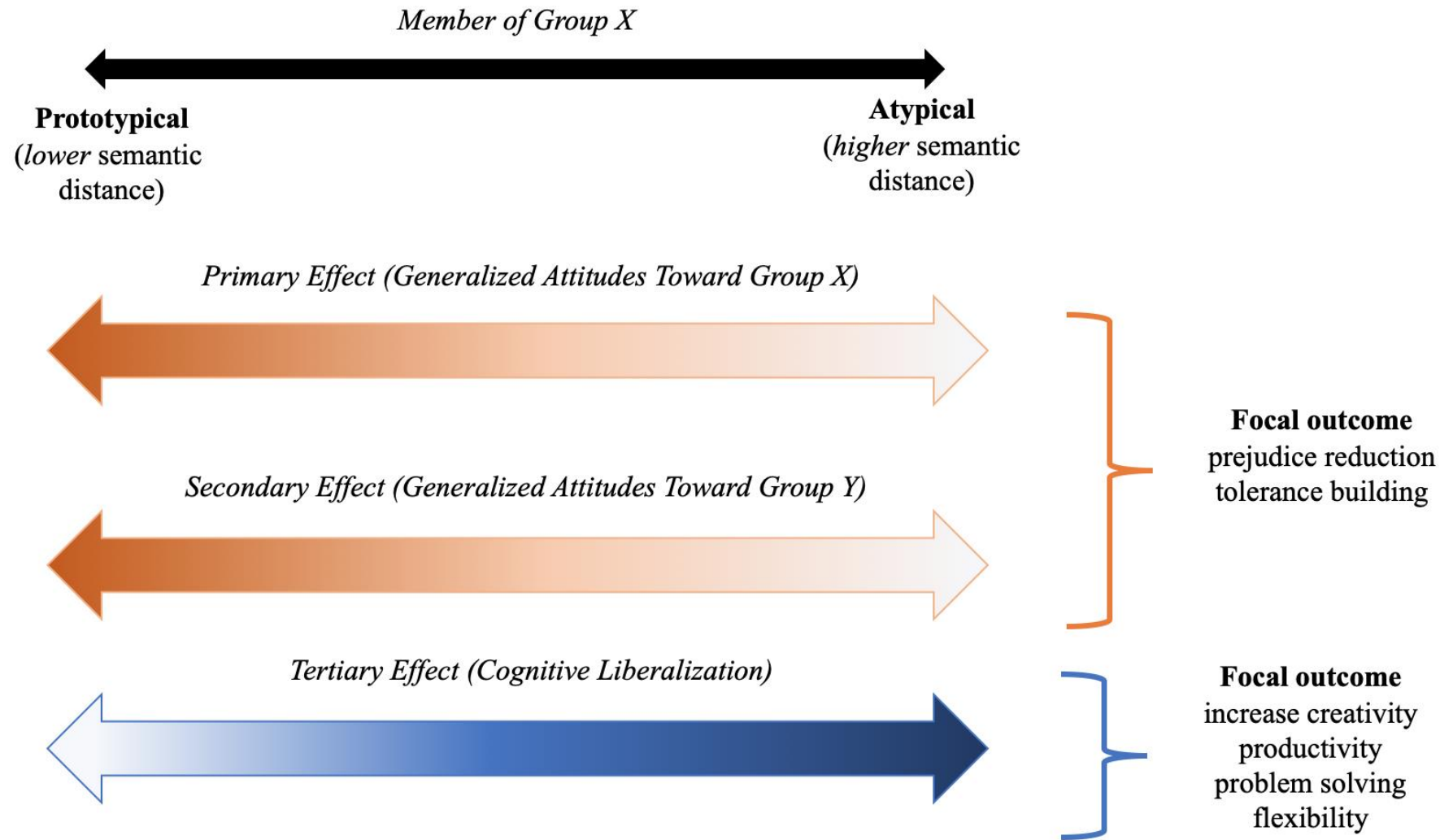
examined racial composition effects in a mock jury trial concerning a Black defendant charged with sexual assault. Groups composed of 4 White and 2 Black jurors processed information more systematically; deliberating for longer, considering a wider range of case facts, and making fewer inaccurate statements than groups composed of 6 White jurors. The influence of racial composition was comparable for groups that answered pretrial questions about racism and those that did not, suggesting effects are not limited to situations framed in racially-charged terms. In other evidence, McLeod, Lobel, and Cox (1996) compared the performance of ethnically heterogeneous or homogenous groups on a brainstorming task that required groups to generate as many ideas as possible to encourage more tourists to the U.S. The ideas produced by the diverse groups were independently judged to be higher quality.

Creativity is also strongly tied to flexible thinking, requiring the capacity to go beyond established and mentally-accessible ways of thinking. Maddux and Galinsky (2009) found that living abroad (but not merely traveling abroad) predicted enhanced performance on various creativity tasks. These effects were mediated by adaptation to the foreign culture; participants who lived longer adapted more to the new culture, incorporating new modes of thinking and behaving, and this adaptation predicted increased creativity. Similar findings have been observed for close cross-group friendships and romantic relations (Lu et al., 2017). Thus immersive intergroup contact experiences make individuals chronically aware of multiple perspectives, increasing the ability to “think outside the box.”

### **III. Taxonomy of Transfer Effects**

We identify three types of transfer effect in the literature reviewed. Intergroup contact can enable generalized improvements in attitudes towards the outgroup as a whole, a ‘primary transfer effect’, as well as other, non-contacted outgroups, a ‘secondary transfer effect’. There is also clear evidence that contact impacts more general cognitive processes outside of the intergroup context. We label this type of generalization a ‘tertiary transfer

effect'. Next we illustrate how these effects can be conceptualised as distinct outcomes of the contact process, yet contingent upon the same component process. Specifically, we argue that a core mechanism central to these effects involves the *semantic distance* between the target (e.g. the contacted individual) and the frame against which they are evaluated (e.g. category prototype). Whereas more traditional contact effects are fostered by *low* semantic distance, contact is more cognitively demanding, with greater potential to lead to broader cognitive growth, under *high* semantic distance (Figure 1).



**Figure 1.** Taxonomy of intergroup contact transfer effects. Double-headed arrows represent the continuum of semantic distance between the target (contacted individual/group) and the frame (group prototype); darker shading denotes stronger effects.



As evidenced, for discrete contact encounters to improve outgroup attitudes, people must be aware of the contact partner's group membership. According to prototype models of category structure (Rosch, 1978), the extent to which a person is categorized as a member of a particular group depends on the degree to which that person is deemed *typical* of the group (perceived prototypically). Positive attitude change will only generalize to the wider social category when the encountered outgroup member is perceived as sufficiently typical or representative of their group. When seen as deviating from the group prototype, the target will be subtyped, leaving the perceiver's attitude towards the outgroup as a whole unchanged (Hewstone, 1994).

For the generalization of positive attitudes to other, secondary groups, the associative process is essentially the same but the semantic distance *between groups* becomes central. This process, whereby attitudes towards a particular attitude objective generalize to other, related attitude objects, occurs across many domains (e.g. Fazio, Eiser, & Shook, 2004; Walther, 2002). Such an effect assumes that attitudes are organized in semantic networks, with changes to one attitude generalizing to others proximal in the network but not affecting more distal ones. Accordingly, group-to-group generalization occurs when secondary outgroups are perceived as similar to the focal, contacted group, but not when the secondary outgroup shares few identifying features with the contacted group and thus not closely connected in a semantic network of attitudes (Harwood et al., 2012; Pettigrew, 2009).

Although the generalization of intergroup attitudes is restricted when targets reside a higher semantic distance from their normative context, this type of contact may have non-obvious consequences for broader cognitive function, that is, tertiary transfer effects. It is well-established that encountering someone who does not easily fit into existing schemata forces individuals to cognitively 'shift gear' and inhibit category-based responding in favor of more individuated and systematic modes of information processing (Fiske & Neuberg, 1990).

Such exposure, and the mindset it triggers, can carry over to other decision domains. When encountering future tasks with structurally similar demands individuals may be less susceptible to the influence of existing knowledge and perspectives and better able to engage in generative and systematic thought processes (Crisp & Turner, 2012). Indeed, repeatedly ‘exercising’ executive functions literally improves processing power (*brain-as-muscle metaphor*, see Jaeggi, Buschkuhl, Jonides & Shah, 2011). Consequently, over time, contact that challenges stereotypic expectations should train a processing style that avoids the use of immediately and habitually accessible knowledge.

Although these effects have previously been discussed in terms of concepts such as *prototypicality*, *category salience* (serving to highlight existing typicality), and *counterstereotypicality*, we argue that these are all manifestations of, and representations of, a more fundamental and parsimonious notion of *semantic distance*. Member-to-group generalization occurs when there is low semantic distance between characteristics of the individual and the category prototype. Group-to-group generalization also occurs when there is low semantic distance between the focal outgroup and the secondary outgroup. When semantic distance is high, and the target is category atypical, the target will be cognitively excluded from the group, and contact has little direct impact on intergroup relations. Yet this type of contact can force a re-learning that is not well-captured by traditional intergroup outcomes but is reflected in wider measures of cognitive expansion and liberalization.

The implication is that when primary/secondary effects are most “effective” or stronger, tertiary effects are least impactful, and vice versa. However, as reflected in Figure 1, the degree of typicality or atypicality of groups and members exists along a continuum, meaning that groups and their members often inhabit the more ambiguous territory in the middle, potentially instigating weaker but simultaneous processes that become a hybrid of primary, secondary, and tertiary effects. These effects are also expected to occur at different

rates. Whereas the associative processes involved in primary/secondary transfer effects operate rapidly via spreading of activation in a semantic network, the tertiary effects on cognition are expected to play out over time, requiring repeated exposure to “strengthen” the mind in forging new neural pathways.

### **Conclusions**

Our taxonomy of intergroup contact transfer effects draws together existing findings to provide new insights into contact-based generalization, with clear implications for future research. Assessing or manipulating the semantic distance between the focal target and standard frame provides a conceptual tool for predicting when and how primary, secondary, and “tertiary” transfers effects will occur. Future research can explore whether the valence of intergroup contact moderates the impact of semantic distance on transfer effect outcomes. Meta-analytic findings reveal that negative contact with stigmatized outgroups generally overshadows positive contact effects and worsens intergroup attitudes, but that positive contact with admired outgroups generally overshadows negative contact effects and improves intergroup attitudes (Paolini & McIntyre, 2019). What do such findings mean for our model? For stigmatized outgroups and admired outgroups respectively, negative and positive contact would be congruent with expectations (i.e., be prototypical or characterised by low semantic distance), spurring little cognitive growth. In contrast, positive and negative contact with these respective groups would be expectancy incongruent (i.e., atypical or characterised by high semantic distance) and thus promote cognitive growth.

Finally, research should also explore how generalization processes unfold differently depending on numerical or social status. Compared with majority groups, minority groups benefit less from contact (Tropp & Pettigrew, 2005), so the latter may benefit less in terms of primary and secondary transfer effects. For tertiary transfer effects, we expect the opposite: Minority groups, by definition, experience more cognitive challenges due to greater outgroup

exposure on a daily basis. Living in a society dominated by the majority group norms, customs, and interpersonal styles trains a disposition towards less categorical and more systematic modes of information processing. Indeed, the benefits of intergroup contact on academic outcomes is apparent amongst both ethnic majority and minority students (Gurin et al., 2002), but the benefits for creativity emerges from research with long-term sojourners who are the minority group (Maddux & Galinsky, 2009).

It is clear that intergroup contact is up to the challenge of moving “beyond prejudice” (e.g., Dixon & Levine, 2012), but the field must embrace a broader conceptualization of what constitutes “success” in contact. Moreover, we must expand the range of outcomes under investigation, to better capture contact’s power to promote openness to different others, as well as different ideas and ways of thinking.

### References

- Allport, G.W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Bowman, N. A. (2010). College diversity experiences and cognitive development: A meta-analysis. *Review of Educational Research*, *80*, 4–33. doi:10.3102/0034654309352495
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. In M. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 37, pp. 255-343). San Diego, CA, Academic Press.
- Brown, R., Vivian, J., & Hewstone, M. (1999). Changing attitudes through intergroup contact: The effect of group membership salience. *European Journal of Social Psychology*, *29*, 741-764. doi: 10.1002/(SICI)1099-0992(199908/09)29:5/6<741::AID-EJSP972>3.0.CO;2-8
- Crisp, R.J. & Turner, R.N. (2011). Cognitive adaptation to the experience of social and cultural diversity. *Psychological Bulletin*, *137*, 242-266. doi: 10.1037/a0021840
- Davies, K., Tropp, L.R., Aron, A., Pettigrew, T.F., & Wright, S.C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *15*, 332-351. doi: 10.1177/1088868311411103
- Dixon, J., & Levine, M. (2012). (Eds.) *Beyond prejudice: Extending the social psychology of conflict, inequality and social change*. New York, NY: Cambridge University Press.
- Fazio, R. H., Eiser, J. R., & Shook, N. J. (2004). Attitude formation through exploration: Valence asymmetries. *Journal of Personality and Social Psychology*, *87*, 293-311. doi: 10.1037/0022-3514.87.3.293
- Fiske, S.T., & Neuberg, S.L. (1990). A continuum model of impression formation, from category-based to individuating processes: Influence of information and motivation on attention and interpretation. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 1-74). New York, NY: Academic Press.

- Gurin, P., Dey, E. L., & Hurtado, S. (2002). Diversity and higher education: theory and impact on educational outcomes. *Harvard Educational Review, 72*, 330-366. doi: 10.17763/haer.72.3.01151786u134n051
- Harwood, J., Paolini, S., Joyce, N., Rubin, M., & Arroyo, A. (2011). Secondary transfer effects from imagined contact: Group similarity affects the generalization gradient. *British Journal of Social Psychology, 50*, 180-189. doi: 10.1348/014466610X524263.
- Hewstone, M. (1994). Revision and change of stereotypic beliefs: In search of the elusive subtyping model. In W. Stroebe & M. Hewstone (Eds), *European Review of Social Psychology*, vol. 5, pp. 69-109. Chichester: Wiley.
- Hodson G., Crisp, R.J., Meleady, R., & Earle, M. (2018). Intergroup contact as an agent of cognitive liberalization. *Perspectives in Psychological Science, 13*, 523-548. doi: 10.1177/1745691617752324
- Hodson, G., & Hewstone, M. (Eds.) (2013). *Advances in intergroup contact*. London, UK: Psychology Press.
- Jaeggi, S.M., Buschkuhl, M., Jonides, J. & Shah, P. (2011). Short- and long-term benefits of cognitive training. *Proceedings of the National Academy of Sciences of the United States of America, 108*, 10081-10086. doi: 10.1073/pnas.1103228108
- Lemmer, G., & Wagner, U. (2015). Can we really reduce ethnic prejudice outside the lab? A meta-analysis of direct and indirect contact interventions. *European Journal of Social Psychology, 45*, 152-168. doi: 10.1002/ejsp.2079
- Lu, J. G., Hafenbrack, A. C., Eastwick, P. W., Wang, D. J., Maddux, W. W., & Galinsky, A. D. (2017). “Going Out” of the box: Close intercultural friendships and romantic relationships spark creativity, workplace innovation, and entrepreneurship. *Journal of Applied Psychology, 102*, 1091–1108. doi: 10.1037/apl0000212.

- Maddux, W. W., & Galinsky, A. D. (2009). Cultural borders and mental barriers: The relationship between living abroad and creativity. *Journal of Personality and Social Psychology, 96*, 1047–1061.
- McLeod, P., Lobel, S.A., & Cox, T.H. (1996). Ethnic diversity and creativity in small groups. *Small Group Research, 27*, 248-264. doi: 10.1177/1046496496272003
- Paolini, S., & McIntyre, K. (2019). Bad is stronger than good for stigmatized, but not admired outgroups: Meta-analytic tests of intergroup valence asymmetry in individual-to-group generalization experiments. *Personality and Social Psychology Review, 23*, 3-47. doi: 10.1177/1088868317753504
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality & Social Psychology Bulletin, 23*, 173-185. doi:10.1177/0146167297232006
- Pettigrew, T. F. (2009). Secondary transfer effect of contact: Do intergroup contact effects spread to noncontacted outgroups? *Social Psychology, 40*, 55–65. doi:10.1027/1864-9335.40.2.55
- Pettigrew, T.F., & Tropp, L.R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*, 751-783. doi: 10.1002/ejsp.504
- Pettigrew, T. F., & Tropp, L. R. (2011). *When groups meet: The dynamics of intergroup contact*. New York: Psychology Press.
- Rosch, E. (1978). Principles of categorisation. In E. Rosch & B.B. Lloyd (Eds.), *Cognition and categorisation* (pp. 27-48). Hillsdale, NJ: Erlbaum.
- Slavin, R. E. (1995). *Cooperative learning: Theory, research, and practice* (2nd ed.). Boston: Allyn & Bacon.
- Sommers, S.R. (1996). On racial diversity and group decision making: Identifying multiple effects of racial composition on jury deliberations. *Journal of Personality and Social Psychology, 70*, 597-612. doi: 10.1037/0022-3514.70.4.597

Tausch, N., Hewstone, M., Kenworthy, J. B., Psaltis, C., Schmid, K., Popan, J. R., & ...

Hughes, J. (2010). Secondary transfer effects of intergroup contact: alternative accounts and underlying processes. *Journal of Personality and Social Psychology*, 99, 282-302.

doi: 10.1037/a0018553

Van Oudenhoven, J.P., Gronenewoud, J.T., & Hewstone, M. (1996). Cooperation, ethnic

salience and generalization of interethnic attitudes. *European Journal of Social*

*Psychology*, 26, 649-661. doi: 10.1002/(SICI)1099-0992(199607)26:4<649::AID-

EJSP780>3.0.CO;2-T

Walther, E. (2002). Guilt by mere association: Evaluative conditioning and the spreading

attitude effect. *Journal of Personality and Social Psychology*, 82, 919-934.

doi:10.1037/0022-3514.82.6.919



**Recommended readings:**

1. Hodson, G., & Hewstone, M. (Eds.) (2013). *See reference list.*

A collection of recent papers documenting advances in intergroup contact theory.

2. Pettigrew, T. F., & Tropp, L. R. (2011). *See reference list.*

A thorough, far-reaching theoretical analysis of intergroup contact.

3. Tausch, N., Hewstone, M., Kenworthy, J. B., Psaltis, C., Schmid, K., Popan, J. R., & ...  
Hughes, J. (2010). *See reference list.*

A collection of studies providing evidence of the secondary transfer effects of intergroup contact in different intergroup contexts.

3. Crisp, R.J. & Turner, R.N. (2011). *See reference list.*

This paper provides a full discussion of how people cognitively adapt to the experience of social and cultural diversity and the resulting benefits that this brings for cognitive flexibility.

4. Bowman (2010). *See reference list.*

This paper discusses research on the educational impact of college diversity experiences in more detail than the current paper.