Social evaluation: Comparing models across interpersonal, intragroup, intergroup, several-group, and many-group contexts

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Abstract

This chapter compares five models that analyze social evaluation from the micro, inter-personal to macro, many-group level: the Dual Perspective Model (DPM), Behavioral Regulation Model (BRM), Dimensional Compensation Model (DCM), Stereotype Content Model (SCM), and Agency-Beliefs-Communion (ABC) Model. A proper under-standing of social evaluation must consider the models' different types and numbers of perceivers, targets, and dimensions. By making a systematic comparison in the first part of the chapter, we sharpen the aim and scope of the complementary models and research programs supporting them. In the second part, we combine the models' pre-mises and evidence bases to generate new insights about social evaluation. In this way, we show that the models can expand and enrich one another. Our conclusion is that, instead of competing against one another, related theoretical perspectives are best compared and integrated to improve scientific insight about complex phenomena, such as social evaluation.

The targets of social evaluation are varied, and include the self, other indi-viduals, ingroups, and outgroups. At some moments, perceivers evaluate just one target. At other times, they appraise two, a few, or even lots of them. Beyond evaluating targets as falling somewhere between bad and good, per-ceivers often differentiate specific dimensions relating to, for instance, task performance and interpersonal interactions. Depending on the situation, the target(s), the perceiver(s), and their goal(s), some dimensions have pri-ority and influence evaluation on other dimensions as well as subsequent decisions and behavior. In sum, social evaluation is a complex activity that proves highly context-dependent. To illustrate this, we first consider deci-sions and behavior through the lenses of our models of social evaluation, using the example of successfully running a hospital. Subsequently, we sys-tematically compare the models and their evidence bases. Then we combine the models in groups of two or three, to generate new lines of research. Finally, we discuss our methods of cross-model collaboration (Ellemers, Fiske, Abele, Koch, & Yzerbyt, 2020) and an integrative framework that resolves three controversies between the models (Abele et al., 2020).

1. Social evaluation is context-dependent and complex: An illustration

Organizations comprise several contexts in which goal achievement and social functioning require adequate social evaluation. Thus, organiza-tions provide an opportunity to test whether the content, priority, and

relation of social evaluative dimensions is context-independent, simple, and can be explained by a single model of social evaluation. In the following introduction, we refute this claim by examining five social evaluative contexts (i.e., personnel recruitment and development, managing collaboration across teams, and dealing with diverse employees and client groups) that recur within the universal organization of a hospital.

When hiring personnel, hospital management tends to select individuals they evaluate as able and assertive, implying that professional qualifications and experience are paramount, whereas social skills and moral values are secondary. To attract the most prestigious and seasoned doctors, nurses etc., job ads often emphasize financial rewards and technological edge. However, this recruitment approach puts off many job seekers for whom salary and innovation are not decisive for taking a job. Before working in a hospital, professionals want to know its stance on moral issues. Which values guide the decisions made in the hospital (e.g., life support, experimental treatment, family involvement)? Does it respect all employees, regardless of their function, effectiveness, and hierarchical position? Does the hospital engage with community concerns, such as equal treatment across race, gender, and age? Those and other moral evaluations determine employees' pride in being part of the hospital, and their effort to work toward its social and entrepreneurial mission. This priority of the *morality dimension in people's evaluation of their actual and possible ingroups* is one of the main premises of the *Behavior Regulation Model* (BRM; Ellemers, 2017).

Employees who subscribe to common standards have an easier time building trust, cooperating in teams, and speaking to external stakeholders with a unified voice. To those ends, hospital management often mandates personnel development interventions that aim to align moral values and improve social skills. However, such trainings may come across as questioning employees' moral compass and team spirit, and thus elicit resistance instead of compliance. Employees hardly doubt their own ethics and manners and, in contrast, view interventions that develop their expertise and career as much more important and interesting. Hospital management should be aware that psychological perspective matters. For example, relative priority of evaluative dimensions depends on hiring personnel vs developing employees. *Observers*—in our illustration: managers evaluating employees—*prioritize others' communion (i.e., morality and friendliness). But actors*—here: employees evaluating the self—*strive for being agentic (i.e., able and assertive)*, as argued by the *Dual Perspective Model* (DPM; Abele & Wojciszke, 2014).

Hospital management imposes hierarchy to ensure that hired and trained personnel collaborate effectively and efficiently. There cannot be endless debates about who does what with whom in which order, so some employees receive the authority and responsibility to instruct others and oversee their work while the latter cooperate or comply. Groups of employees with higher decisional power have higher status, as also institutionalized by way of other privileges, such as superior titles and higher salaries. As much as collaboration in large organizations requires differences in status etc. between groups, those obvious and undeniable differences can create conflict if handled poorly. Specifically, higher-status groups appear more competent and self-determined and thereby find self-esteem (e.g., medical specialists, such as radiologists, surgeons, and pathologists). To stay motivated, lower-status groups (e.g., psychotherapists, physical therapists, and nurses) must find self-esteem, too, which they achieve by claiming positive distinctiveness on an alternative evaluative dimension: interpersonal warmth (i.e., benevolence, kindness, sincerity, etc.). Because of the structural constraints that shape the behaviors of the different groups but also to maintain harmonious relations and productive collaboration, the higher-status, higher-competence groups must concede that they are inferior in terms of warmth— for example, by entrusting the lower-status groups with interpersonal tasks (e.g., patient admission and care) and emphasizing their relevance for the hospital's success and reputation. The *Dimensional Compensation Model* (DCM; Yzerbyt, 2016) predicts such *intergroup balancing of competence and warmth evaluations.*

Consensus that higher- and lower-status groups are inferior respectively in evaluated warmth and competence by no means implies that hospital management can neglect addressing their respective alleged deficiencies in warmth and competence. These are stereotypes that constrain the potential for performance. Stereotypically, some helping professions might seem more warm than competent (e.g., psychotherapists); others should learn to respect their skills. On the flip side, stereotypically competent but cold healthcare providers (e.g., anesthesiologists) might benefit from recognition of their efforts to show the warm demeanor essential for building a trusting relationship with patients. And the janitors, stereotypically low on both warmth and competence should be treated with both more respect and trust. The *Stereotype Content Model* (SCM; Fiske, 2018) identifies professional, ethnic, class, and gender categories, *a variety of groups that society evaluates ambivalently—that is, as competent but cold, or warm but incompetent—as well as some groups stereotypically low or high on both dimensions.*

Due to global migration and cultural differentiation, hospital management encounters an increasing variety of patient groups. Some types of patients are traditional and conservative in different ways (e.g., religions and sects), whereas other groups are modern and liberal in different ways (e.g., non-binary genders and alternative sexual orientations). Each group has particular beliefs surrounding childbirth, aging, lifestyle, illness, treatment, and death. Many of those beliefs are incompatible, deviate from national conventions, or even clash with the hospital's rules and regulations. Examples concern the family's voice, interactions between gender, age, and ethnic categories, and status quo vs next-generation treatment, standard vs alternative medicine etc. Optimally caring for diverse patients requires knowledge about, and awareness of, their particular beliefs. Separating patients with dissimilar beliefs mitigates intergroup conflict, for example. Ideally, personnel are selected to match a patient's beliefs, or at least to acknowledge and respect those beliefs, because *perceived mismatch between societal groups' beliefs undermines mutual evaluation as communal and thereby cooperation*, as argued by the *Agency-Beliefs-Communion Model* (ABC model; Koch et al., 2020).

To summarize our organizational example: When looking for a job, individuals evaluate organizations (i.e., possible ingroups) by zeroing in on their moral values, as suggested by the BRM. As employee in action, the self prioritizes gaining on the agency dimension (i.e., ability and assertiveness), whereas others in the organization (e.g., the managers) prioritize developing the employees' communion (i.e., morality and friendliness). That is, the priority of evaluative dimensions depends on actor vs observer perspective, as argued by the DPM. The DCM posits that employee groups with high status appear competent, and that groups seen as less competent are superior on the warmth dimension. This concession maintains intergroup harmony and collaboration in the organization. The SCM points out that stakeholders evaluate a variety of organizational groups (e.g., age, gender, racial, ethnic groups) ambivalently—as competent but cold, or warm but incompetent—as well as low or high on both dimensions. Finally, the ABC model proposes that accommodating to client groups' ideological beliefs matters, as their evaluations of compatible beliefs drive their commitment to the organization. Taken together, social evaluation is context-dependent (e.g., job search, personnel development, collaboration across organizational teams, and managing diverse employees and client groups) and complex, as it involves different types and numbers of perceivers, targets, and dimensions that differ in priority and their relation to other dimensions. No single model explains all those aspects of social evaluation.

2. Joining forces to better understand how people navigate their social environment

Five models of social evaluation are supported by solid evidence. These models disagree, however, about the number and content of the dimensions perceivers use to evaluate targets, the priority of some dimension(s), and their relation (i.e., zero, positive or negative linear, or curvilinear). The standard approach to these scientific controversies is to empirically test conflicting predictions, to see which model wins.

We advocate an alternative approach of systematically comparing the models' aim and scope, to specify which social evaluative contexts and goals they address, and explore whether together they explain more aspects of the phenomenon than each by itself. The models each started out by addressing a specific issue rooted in particular theoretical and empirical traditions; these orientations resulted in several qualitative and quantitative differences between the models. Over time, however, each model incorporated more premises and explained more phenomena. Thereby, the models became more alike. The current risk is that their co-existence in the literature easily confuses the reader, especially those who believe that only one model can be correct, explains it all, and necessarily excludes the other models.

Here, we argue for the value of systematically comparing the five models, considering that they co-exist legitimately. We review the claims empirically substantiated by the models to delimit and clarify the aim and scope of each—the first main contribution of this chapter. By intertwining the paradigms and premises of two or three models at a time, we generate and empirically substantiate new insights about social evaluation—the second main contribution of this chapter. Elsewhere, we have described our procedure to isolate ourselves for a week and systematically compare our models based on lessons from negotiation and conflict management research (Ellemers et al., 2020). This allowed us to identify and resolve three main controversies between the models and to develop an integrated framework. On a more general, less specific theoretical level, this framework goes beyond the systematic model comparison and dyadic/triadic model combination in this chapter by specifying the goals and processing modes operating in the evaluative contexts explained by each model (Abele et al., 2020). We detail these other efforts (collaborative procedure and integrative framework) at the end of this chapter.

3. A systematic comparison of five models of social evaluation

Next, we compare the theoretical roots, focal domains, premises, and evidence for the five models, organizing them from the micro, interpersonal level to the macro, many-group level. Currently, knowledge about social evaluation is dispersed across the literature—no contribution systematically compares evidence collected in the context of these five models to delimit and clarify their aim and scope (see Table 1).

3.1 Interpersonal evaluation: Dual perspective model (DPM)

The DPM (Abele & Wojciszke, 2007, 2018) focuses on *interpersonal* social cognition and evaluation. It takes both an evolutionary and a functional approach in explaining why two fundamental dimensions of content, the Big Two of Agency and Communion, are universally present in the perception of the social environment and the self. These Big Two are closely tied to the basic perspectives in social interaction, the actor perspective ("self") vs the recipient perspective ("other").

3.1.1 Theoretical roots

Some DPM roots are dual-content conceptualizations in psychology. The idea of two basic types of content in human life can be traced back to ancient philosophical thinking (Markey, 2002), and twofold conceptualizations of content appeared in social and personality psychology already in the mid-20th century and continued to reappear under different names and with respect to different constructs such as goals, motives, values, identities, perceptions, and traits. Abele and Wojciszke (2014) identified about a dozen such conceptual distinctions: agency and communion, masculinity and femininity, competence and morality, individualism and collectivism, independent and interdependent self, competence and warmth, dominance and trustworthiness, or social vs intellectual goodness. Although these distinctions are not redundant, they substantially overlap. The DPM adopted Bakan's (1966) labels of Agency and Communion for these dimensions.

The two dimensions are not accidental, but they reflect core challenges of life (evolutionary account) and core functions of social cognition (functional account). The evolutionary explanation for the existence of these Big Two states that people constantly face two core challenges of life—achieving

Table 1 Systematic comparison of five models of social evaluation.

Interpersonal evaluation: Dual perspectives model (DPM)

	– Priority of communion
	– Actors focus on their agency; observers focus on communion
	– Power and interdependence moderate the importance of others' Agency
	– Distinguishing facets of agency and communion refines the predictions

Intragroup evaluation: Behavioral regulation model (BRM)

	– Sociability differs from morality
	– Morality is primary for group pride and identification
	– People are more motivated to do what is moral vs competent or sociable
	– Adaptation to moral ingroup norms communicates loyalty and earns respect

Intergroup evaluation: Dimensional compensation model (DCM)

	– Compensation between the competence and warmth of two groups
	– Compensation is unique to these two dimensions
	– Group characterizations are context-based but competence (vs warmth) evaluations are less malleable
	– Group conflict and absence of status differences preclude compensation
	– Underlying mechanisms: Different status entails different motives

Several-group evaluation: Stereotype content model (SCM)

	– Primary dimensions are warmth and competence
	– Stereotypes are not only unidimensional but also mixed
	– Interdependence predicts warmth; status predicts competence
	– Distinct emotions and behaviors follow from warmth by competence combinations
	– Warmth and competence apply to interpersonal interactions as well as societal judgments

Many-group evaluation: Agency-Beliefs-Communion (ABC) model

Table 1 Systematic comparison of five models of social evaluation.—cont'd

	– Spontaneous perception on Agency, Beliefs, and Communion
	– Groups' Beliefs are opportunities for exploitation vs exploration
	– Perceived self-group similarity on Agency and Beliefs independently predict perceived Communion of groups, and prosocial behavior toward them
	– Groups' Communion is less consensual than groups' Agency and Beliefs

individual goals, which require Agency, as well as initiating and maintaining supportive relations with others, which require Communion (Ybarra et al., 2008). The functional explanation suggests that social cognition and evaluation does not only reflect social reality but also serves the perceiver's goals (Dunning, 2004; Fiske, 1992). Regarding the actor/self, this means identifying the facilitating and inhibiting conditions for own goal pursuit (requiring Agency inferences). Regarding others, this means adequate identification of their intentions (requiring Communion inferences).

Other theoretical roots of the DPM are perspective differences in evaluating the social world. Early attribution research had already revealed the importance of perspective for causal attributions (Jones & Nisbett, 1971; see also Malle, 2006). Actors often make more situational attributions about the causes of their own behavior than observers do, because their visual perspective is on the situation. Observers make more person-oriented attributions, because their visual perspective is on the actor. DPM considers perspective more generally: As actors, people pursue their goals and monitor goal achievement by interpreting their own ability and assertiveness. As recipients (or observers), people want to understand the actor's benevolent or malevolent intentions by interpreting trustworthiness and friendliness.

3.1.2 Focal domains

The focal domains of the DPM are behavior interpretations and trait ascriptions dependent on perspective in interpersonal encounters (actors vs observers) or, more generally, regarding self vs others. The DPM definitions state that Agency refers to qualities relevant for goal attainment, such as being assertive, smart, or capable, whereas Communion refers to qualities relevant for establishing and maintaining social relationships, such as being friendly, trustworthy, or fair. As Hogan (1983) put it, the dimensions respectively reflect "getting ahead" (Agency) and "getting along" (Communion).

These fundamental dimensions each distinguish two "facets" (components or subfactors, see Table 1; Abele, Cuddy, Judd, & Yzerbyt, 2008; Abele & Hauke, 2019; Abele et al., 2016; Hauke & Abele, 2019, 2020a, 2020b). Agency's facets are assertiveness and ability (originally labelled "competence"; Abele et al., 2016); Communion's facets are friendliness (originally labelled "warmth"; Abele et al., 2016) and morality. The Agency facets refer to the fact that successful goal pursuit or "getting ahead" requires both ability and motivation/volition (assertiveness). Communion facets' friendliness-morality distinction refers to establishing and maintaining social relationships or "getting along," which requires being both friendly and trustworthy. As confirmatory factor analyses have shown, English, French, German, Polish, and Chinese all differentiate these facets (Abele et al., 2016).

3.1.3 Premises and evidence

The DPM asserts that Agency and Communion and their facets are the main dimensions for navigating the social world, because they reflect the basic challenges people confront and the basic information people want to gather. The dimensions characterize both behavior (interpreting behavior as being more or less agentic or communal) and social evaluation (interpreting self and others in terms of Agency and Communion). The model makes four key predictions, all tested using varied methods and measures (for details, see Abele & Wojciszke, 2014, 2018).

3.1.3.1 Priority of communion

In social interactions, Communion has priority, because from an evolutionary perspective, social relationships are indispensable for both actors and observers. From a functional point of view, perceiving others first of all serves to find out their benevolent or malevolent intentions. As illustrative evidence: In one study, participants independently rated 300 traits (each participant rated all 300 traits on only one criterion) with respect to how much each trait reflected agency, communion, individualism, collectivism, masculinity, femininity, competence, morality, and how much it served interest of the self or interests of others (Abele & Wojciszke, 2007; Study 1). Principal component analysis of these ratings revealed two factors which explained about 90% of variance. The Communion ratings (communion, femininity, morality, other-interest, collectivism) loaded on the first factor, the Agency ratings (agency, self-interest, individualism, competence, masculinity) loaded on the second factor. The Communion factor explained 70% of variance, whereas the Agency factor explained 20%. Further studies tested the

generalizability of these findings in different languages (Chinese, English, French, German, and Polish). Results showed that Communion terms were more similar across languages and also explained more variance than Agency terms (Abele et al., 2016; Abele, Uchronski, Suitner, & Wojciszke, 2008).

Another example for the priority of Communion is a series of experiments on processing speed of Agency vs Communion traits (Abele & Bruckmüller, 2011). Independent of positive or negative valence (Unkelbach, Alves, & Koch, 2020), Communion traits were recognized faster than Agency traits in a lexical decision task. Communion traits were also categorized (as positive or negative) faster than Agency traits. Moreover, Communion was inferred faster than Agency from behavior descriptions that were equally open to both types of interpretation.

Uchronski (2008) asked participants to describe themselves in an open response format. These descriptions were later content-analyzed. She found that 44% of the descriptions were communion-related, and 26% were agency-related (remaining 30% related to emotions, lifestyle, or physical characteristics). Abele and Bruckmüller (2011, 2013) similarly showed that when describing the self and another person (friend, acquaintance) in an open-response format, Communion trait ascriptions appeared at an earlier stage than Agency trait ascriptions. In another study (Wojciszke, Bazinska, & Jaworski, 1998) 53% of the variance of global impressions of real persons was predicted by their perceived Communion, and only 29% of impressions' variance by their perceived Agency.

3.1.3.2 Perspective determines dimension relevance

The Big Two are intrinsically tied to perspective in social cognition and evaluation: Communal content is more related to the observer/recipient perspective than the actor/self perspective. This hypothesis derives from the fact that observers are mostly not uninvolved, but rather recipients of others' actions. Therefore they focus on the possible benefits or losses of the actor's behavior regarding the self, which can be predicted from inferences about Communion. Agentic content is more related to the actor/self perspective than to the observer/other perspective. This hypothesis is based on the assumption that people think of themselves as actors who have a free will and who intentionally pursue their goals, which means monitoring effectiveness of own actions, that is, Agency.

As illustrative evidence: In one study participants had to choose between two types of training for either themselves or for another person. They chose trainings with opportunities to improve Communal skills more for others

than for the self and trainings with opportunities to improve agentic skills more for the self than for others. In another study participants rated the importance of agentic vs communal traits for the self vs a friend. They rated the importance of agentic traits higher for the self than for the friend and conversely the importance of communal traits higher for the friend than for the self (Abele & Wojciszke, 2007). These findings are invariant to the methodology applied: Abele and Bruckmüller (2013) asked their participants to describe themselves and a friend, that is, a person that they knew well but did not feel very close to, with up to eight characteristics. These descriptions were later content-analyzed with respect to Agency, Communion, or other (e.g., pretty, athletic, tall); 51% of the traits were Communal, and 33% Agentic (15% other). Participants listed more Agency traits in their self-descriptions and more Communion traits in the description of the friend.

When asked to remember events that had influenced their self-esteem, people typically recall Agentic behaviors; however, when asked to remember events that had influenced their evaluation of another person, they recall Communal behaviors (Abele & Wojciszke, 2007). In real interactions, actors rate their own behavior more in terms of Agency than receivers do (Abele, Bruckmüller, & Wojciszke, 2014). Moreover, self-esteem is more related to Agency than Communion (Abele et al., 2016; Wojciszke, Baryła, Parzuchowski, Szymkow, & Abele, 2011), but perceivers infer liking of others more from these individuals' Communion than Agency (Wojciszke, Abele, & Barylła, 2009). A study by Wojciszke (1994) showed that identical acts were construed in terms of Communion (e.g., as moral vs immoral) when performed by others, but in terms of Agency (as competent vs incompetent) when performed by the perceivers themselves.

3.1.3.3 Power and interdependence moderate the importance of others' agency

Whereas communion is generally prior and more important in evaluating others than Agency, the degree of interdependence between self and other as well as power differences between self and other moderate the importance of others' Agency. The more (inter-) dependence, and the more power differences between self and the other, the more the other's Agency is important for the self, too. As illustrative evidence: Abele and Brack (2013) presented their participants with situations in which the self was either independent of the other person (accidental contact without any consequences), dependent on the other person (own goal attainment was dependent on other's behavior), or interdependent with the other person (goal attainment

due to joint effort) and asked them to choose which out of an equal number of Agency and Communion traits (pretested for valence) the other person should have. The findings clearly revealed that the importance of Agency varied with dependence/interdependence: The more dependence/interdependence, the higher the importance of Agency traits. In a field study in which workers had to assess their supervisor's Agency and Communion and also had to state their liking of the supervisor, results showed that liking was always related to the supervisor's Communion, but when the workers' outcomes were dependent on the supervisor's competence, then liking was also related to Agency (Wojciszke & Abele, 2008).

Regarding power and status, Cislak (2013) showed that people in high power positions were more interested in prospective subordinates' Agency than Communion. Even temporary increases in status, such as winning a game of tennis, resulted in a heightened use of Agency as opposed to Communion traits, when deciding who is similar to whom and when describing one's own current affective state (Baryła & Wojciszke, 2019).

3.1.3.4 Distinguishing facets of agency and communion helps to refine the predictions

Previous research in the realm of the Big Two was somewhat obscured by the fact that the facets of Agency (competence, assertiveness) and Communion (friendliness, morality) were not clearly distinguished and that in some studies one of the facets was analyzed, in other studies other facets, although findings may differ between facets. We therefore hypothesize that distinguishing between the facets may help to refine the predictions. In a recent study by Abele and Hauke (2019), for instance, people had to assess own Agency-competence, Agency-assertiveness, Communion-friendliness and Communion-morality, and also rated their self-esteem. They further rated a specific other person (either a friend or a celebrity, self-selected from politics or show business) on the facets and with respect to their esteem of the other. Regarding the self, participants rated their Communion-morality highest and Agency-assertiveness lowest. However, Agency-assertiveness was most strongly associated with self-esteem, whereas Communion-morality showed almost no association. Others were rated lower on three of the four facets than the self (exception: Agency-assertiveness). Esteem of others was strongly related to Communion-morality, Communion-friendliness and Agency-competence, but not to Agency-assertiveness (see Fig. 1).

Other research (Hauke & Abele, 2019, 2020a) tested whether negative gossip about the own person affects self-evaluation differently depending
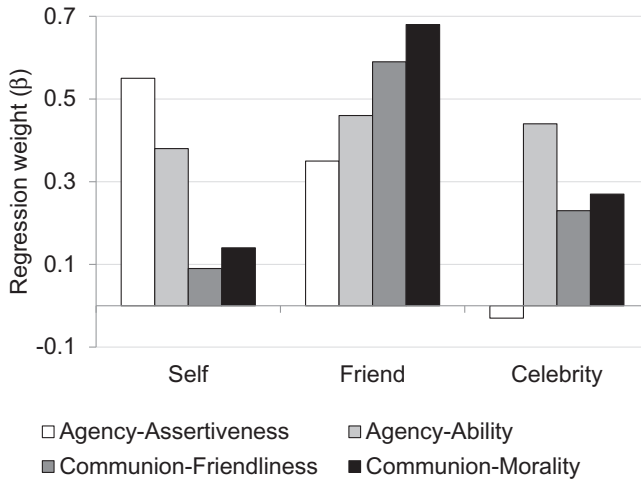
Fig. 1 Results of multiple regression analyses predicting perceived esteem of the self, a friend, or a celebrity from perceived Agency-Assertiveness, Agency-Ability, Communion-Friendliness, and Communion-Morality of the self, this friend, or this celebrity. *Adapted from Abele, A. E., & Hauke, N. (2019). Comparing the facets of the big two in global evaluation of self versus other people.* European Journal of Social Psychology, 50*, 969-982. https://doi. org/10.1002/ejsp.2639.*

on which facet is concerned (e.g., negative gossip about lack of Agency–assertiveness, etc.) and which aspect of self-evaluation is considered. We argued that similar to interpersonal interaction with actors and observers, the self can also be distinguished into an "actor" self (how do I define myself) and an "observer" self (how do others see me). Across several studies and with different methodologies we found that the actor–self was most threatened when a person's Agency–assertiveness was attacked, whereas the observer–self was most threatened when Communion-morality was attacked.

3.2 Intragroup evaluation: The behavior regulation model (BRM)

3.2.1 Theoretical roots

Development of the Behavioral Regulation Model (BRM; Ellemers, 2017; Ellemers & Van den Bos, 2012) was inspired by the social identity approach (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1985, 1991), which considers individuals in terms of their group–based self (Ellemers & Haslam, 2011; Ellemers, Spears, & Doosje, 1999). People's groups afford them a sense of (collective) self-esteem, and offer guidelines for individual beliefs, attitudes, and behaviors (Ellemers, 2012). Groups' characteristic features help

members decide how similar or different they and others are, depending on whether these others are ingroup or outgroup. Such perceptions of self and others partly reflect objective properties and achievements, but are also guided by the motivation to think well of oneself and one's group (see Table 1). The connection between individuals and their groups serves two key social functions (Ellemers & Van den Bos, 2012). First, different groups are evaluated in terms of their ability of affording a positive identity to their members (Tajfel, 1978; Tajfel & Turner, 1979). Second, the distinctive characteristics of these groups guide individuals in the behavioral choices they make, as a way to communicate their loyalty to the ingroup and set themselves apart from the outgroup (Turner, 1985, 1991).

3.2.2 Focal domains

The BRM focuses on the self in the group, and examines how *intragroup* dynamics impact individuals' behavioral choices (Table 1). Key concerns guiding these choices stem from the desire to be respected and valued as a good group member, to understand how the ingroup differs from relevant outgroups, and to take pride in one's group(s). The respect received from other ingroup members is more important than how one is evaluated by others outside the group. This clarifies why general dispositions (altruism) or interpersonal liking (friendliness) do not fully explain the behavioral choices people make in a group context—when they emulate the behavior of a "good group member."

In an *intergroup* context, people consider multiple groups and their characteristic properties by judging how an association with such groups might reflect on the self. This helps them to determine which ingroups are most important to their identity and which individuals and groups can be allowed to associate with the self. Behavioral implications of such concerns are visible (a) in displays of attraction to, identification with, and pride in one's association with particular work teams, social groups, or organizations, (b) in admitting and helping some individuals to gain access to one's work team or group while excluding others, and (c) in psychophysiological, neurocognitive, and task indicators revealing how group-level characteristics or behaviors impact upon the self-views of individual group members.

3.2.3 Main premises

The BRM defines Morality as capturing shared group values that prescribe how to be a good group member (see Table 1). Although often rooted in generic guidelines (e.g., "be honest" or "do no harm"), the specific

expressions can vary from one group to the next (e.g., "eat no meat"; Ellemers & Van der Toorn, 2015). Interpersonal differences in moral values raise more cardiovascular and emotional threat, are considered less acceptable in other ingroup members, and seem more difficult to overcome than differences in competence, or opposing material interests (for an overview, see Harinck & Ellemers, 2014). People primarily seek inclusion and social respect from groups that can validate and approve their moral values—and distance themselves from those with different morals—to avoid such threat.

The BRM emphasizes the symbolic value of specific behaviors that signal shared identity and group loyalty, which may include acts that are not obviously moral (e.g., "virtuous violence," Fiske & Rai, 2014; Pinker, 2011). The BRM thus complements biological approaches that emphasize the evolutionary value of empathy, sharing, and helping for individual and group survival (Rai & Fiske, 2011; Tomasello & Vaish, 2013; Ybarra et al., 2008).

3.2.3.1 Sociability differs from morality

In the BRM, Competence, Morality, and Sociability represent three different components of individual and group virtue (see Table 1). The Competence dimension relates to task performance (capability, intelligence, skill). However, on the relational dimension, the BRM distinguishes between Morality (deep-level intentions) and Sociability (surface-level demeanor) facets (Leach, Bilali, & Pagliaro, 2015). Often one is inferred from the other—causing halo effects—and surface-level friendly demeanor may accurately reflect deep-level moral intentions to do well. However, this is not the case by definition: Think of a con artist whose friendly demeanor makes it easier to deceive others, or a close friend whose honest critique is brutal but helpful. Accordingly, different studies reveal that—when examined with separate rating scales—people distinguish between the Morality (honesty, trustworthiness, sincerity) and Sociability (friendliness, likeability) of individuals and groups (Brambilla & Leach, 2014; Goodwin, Piazza, & Rozin, 2014; Pagliaro, Ellemers, & Barreto, 2011). When asked to indicate key ingroup virtues with lists of such traits, confirmatory factor analyses reveal that a three-factor model shows better fit than simpler two-factor or one-factor models. Empirical support for the distinction between these three factors is found in multiple studies examining different national samples, addressing members of experimentally created as well as natural ingroups, and including groups that were more vs less successful than relevant comparison groups (Leach, Ellemers, & Barreto, 2007; see also Ellemers, Pagliaro, & Barreto, 2013).

These initial studies and follow-up research have consistently found that Morality is distinct from Sociability, and that Morality trumps Sociability (as well as Competence) in people's evaluations of themselves as well as other individuals and groups (see below). Once this difference was established with different methodologies and measures, further examinations of BRM predictions mainly addressed the comparative impact of Competence (to evaluate their task achievement) and Morality (as the key indicator of people's worth in social interactions).

3.2.3.2 Morality is primary for group pride and identification

Initially, social identity premises (consistent with DCM reasoning explained below) led scholars to assume that groups might claim superior Morality (or Sociability) as a secondary compensation strategy, when lacking in Competence as a primary indicator of social status and esteem (Ellemers & Van Rijswijk, 1997; see Table 1). However, empirical comparisons of these three dimensions of individual or group virtue reveal that differences in Morality produce the largest effect sizes, with effects of Competence and Sociability being smaller or even non-significant. In comparison to Competence (intelligence, skill) and Sociability (likability, friendliness), Morality (trustworthiness, sincerity) is rated as the most important virtue for ingroups and explains the most variance in differentiating the ingroup from various outgroups (Leach et al., 2007). When pitted against Competence or Sociability in orthogonal designs, Morality (honesty, trustworthiness) is the most important source of attraction to individuals and groups, and shows the strongest relations with ingroup pride and identification (for reviews, see Ellemers, 2017; Ellemers et al., 2013). This is also true in contexts where Competence might be more relevant, such as experimental task teams and organizations where people apply for a job (Van Prooijen & Ellemers, 2015; Van Prooijen, Ellemers, Van Der Lee, & Scheepers, 2018).

Similar effects emerge in the consideration of individual group members. People are more keen to avoid interacting with ingroup members lacking in Morality. They are seen as more of a threat to the positive identity of the group than those lacking in Competence or Sociability (Brambilla, Sacchi, Pagliaro, & Ellemers, 2013). Individuals who do not meet the group's moral standards are less likely to receive help from other ingroup members (Pagliaro, Brambilla, Sacchi, D'Angelo, & Ellemers, 2013) and are more at risk of being excluded from the group than those who are lacking in Competence (Van der Lee, Ellemers, Scheepers, & Rutjens, 2017).

3.2.3.3 People are more motivated to do what is moral vs competent or sociable

When individuals consider their own social value, they express more concern about being considered moral, than being seen as competent or sociable. This also introduces the "paradox of morality" (Ellemers, 2017): Because they care so much about their moral standing, people are highly motivated to do what makes them seem moral in their own eyes and the eyes of others. At the same time, these concerns also make them reluctant to consider, acknowledge, or learn from their past moral failures.

People anticipate that the way their moral behavior is judged by others will have a more enduring effect on their self-views and social reputation than other people's evaluations of their competence or sociability. This makes them more concerned about their ability to cope with their perceived moral failures, and more motivated to justify and repair their moral image in the eyes of other ingroup members (Pagliaro, Ellemers, Barreto, & Di Cesare, 2016). Ingroup comments that question one's past moral behavior elicited more defensive emotional responses and lower perceived coping abilities compared to ingroup comments on one's lack of competence. Anticipating an opportunity to restore one's self-image as a moral group member increases perceived coping abilities (Van der Lee, Ellemers, & Scheepers, 2016).

Similar effects were observed when examining the perceived morality of the ingroup. Confronting individuals with the moral obligations (vs ideals) of their group increased cardiovascular indicators of threat (Does, Derks, Ellemers, & Scheepers, 2012) and elicited a preoccupation on the avoidance of failure, which was not visible when obligations (vs ideals) referred to ingroup competence (Does, Derks, & Ellemers, 2011). Likewise, more threat was reported when confronting individuals with past moral transgressions made by an ingroup rather than an outgroup member, but feelings of threat and defensive responses were alleviated when there was an opportunity to restore the group's moral image (Van der Toorn, Ellemers, & Doosje, 2015).

Experimental evidence further reveals that people devote more attention to guidelines that make them seem moral than to guidelines that make them seem smart or friendly, especially when they are aware their behavior is scrutinized by other ingroup members (Ellemers, Pagliaro, Barreto, & Leach, 2008). This was demonstrated with a Stroop task, allegedly demonstrating one's Morality or Competence (Ståhl & Ellemers, 2016). Likewise, participants showed less bias on an Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998), when they considered this as a test of their Morality rather than their Competence. EEG measures additionally revealed that presenting the IAT as Moral task increased early attention to task stimuli

(N1 potential), and enhanced conflict and error monitoring during task performance (N450 and ERN; Van Nunspeet, Ellemers, Derks, & Nieuwenhuis, 2014). Follow-up research revealed these results were triggered in particular when task responses were being monitored by an ingroup member, rather than an outgroup member (Van Nunspeet, Ellemers, & Derks, 2015).

3.2.3.4 Behavioral adaptation to moral ingroup norms communicates loyalty and earns respect

Empirical support for this premise was found when examining the impact of group norms on behavioral choices made by individual group members, across different kinds of group norms and group types (Ellemers et al., 2008). This was done, for instance by highlighting an intergroup comparison where the ingroup would seem less successful than the outgroup, then outlining different strategies that might allow for individual or ingroup position improvement, and asking research participants to indicate their personal preference for one of these strategies. This enabled exposure to a group norm manipulation, specifying which behavioral strategy was preferred by the ingroup (individual or ingroup improvement), and why (because they considered this moral or smart). Results of three studies revealed that participants were more inclined to behave in line with the group norm and were faster to decide this, when this was endorsed as a "moral" choice, rather than a "smart" choice (Ellemers et al., 2008). The greater impact of moral ingroup norms was observed regardless of participants' a priori individual preferences, and regardless of which behavioral option was advocated by the group (see Fig. 2).

Follow-up studies further examined the group dynamic and reputational concerns explaining these behavioral choices. Here students from the South of Italy (a) were reminded of occupational and employment differences with the North of Italy, (b) were asked to consider individual (move to the North) and collective (develop an employment program for the South) behavioral options, and (c) indicated their personal behavioral preferences and ingroup identification (Pagliaro et al., 2011). Then they received information about how others had allegedly rated the different behavioral options. The first study contrasted ingroup norms that were identified as smart/stupid vs moral/immoral, the second study compared behaviors that were considered moral/immoral by the lower status ingroup or by the higher status outgroup. Both studies examined how norm adherence was seen to relate to anticipated ingroup respect and inclusion, and behavioral preferences expressed by participants.
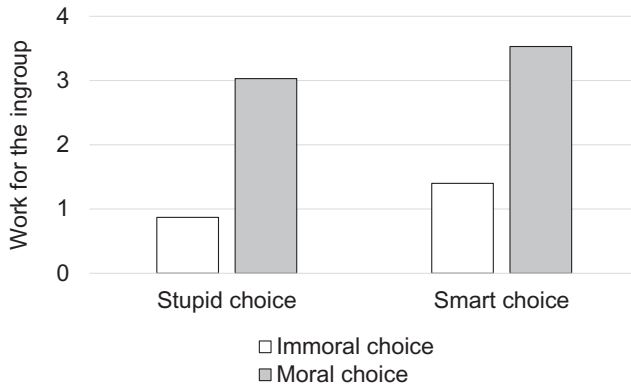
Fig. 2 Working toward ingroup improvement (0–5) when the ingroup sees this choice as stupid or smart by immoral or moral. *Adapted from Ellemers, N., Pagliaro, S., Barreto, M., & Leach, C. W. (2008). Is it better to be moral than smart? The effects of morality and competence norms on the decision to work at group status improvement.* Journal of Personality and Social Psychology, 95*(6), 1397–1410. https://doi.org/10.1037/a0012628.*

Even though all manipulations were successful and manipulation checks showed equally strong effect sizes, participants' further responses only revealed main effects of the moral ingroup norm. Thus, their own behavioral choices were only affected by the moral judgments of the (low status) ingroup (not the high status outgroup) and when the group had identified this behavior as moral, instead of smart. Participants anticipated they would be more respected and included by the ingroup when they would do what the ingroup considered "moral" (instead of "smart"). This mediated their own behavioral choices, regardless of whether the group recommended collective or individual position improvement and regardless of how this aligned with their a priori personal preferences (Pagliaro et al., 2011). Thus, people behave in ways that the group considers moral, to earn respect from other ingroup members and avoid exclusion from the group. They also do this when outgroup morals would prescribe different behaviors, and even when this makes them seem less competent (Ellemers, 2017).

3.3 Intergroup evaluation: Dimensional compensation model (DCM)

The DCM operates mainly at the *intergroup* level but also at the interpersonal level, focusing on situations with two social targets in comparative contexts, particularly those involving status (Cambon, Yzerbyt, & Yakimova, 2015; Yzerbyt, Provost, & Corneille, 2005; for a review, Yzerbyt, 2018). The thrust of the model is that, because of structural constraints, social

groups often differ in terms of one of the two fundamental dimensions, mostly Competence. This entails consequences on the other dimension, both in behaviors and in inferences.

3.3.1 Theoretical roots
The DCM builds on two traditions, social cognition and social identity (Yzerbyt et al., 2005; for a review, Yzerbyt, 2018). For the first, seminal research by Asch (1946) and by Rosenberg, Nelson, and Vivekananthan (1968) provided evidence for two fundamental dimensions of social evaluation, namely Warmth and Competence, to navigate the world (Brown, 1986). More recently, the SCM (next section; Fiske, Cuddy, Glick, & Xu, 2002) relied on the same distinction to revisit the issue of stereotyping with a concern for content rather than process (see also Phalet & Poppe, 1997). Societal groups locate in a bi-dimensional space with Competence deriving from power and status relations between groups, whereas Warmth derives from their interdependence. The DCM builds on the same two dimensions while acknowledging that each of them also comprises two facets that are more specific: ability and assertiveness for Competence, and friendliness and morality for Warmth (Abele et al., 2016; Abele, Cuddy, et al., 2008).

Social identity approaches focus on how group members secure a positive view about themselves (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). This is easy for the high-status group but tough for the low-status group. Building on social creativity (Lemaine, 1974), groups will not claim superiority or accept inferiority on every aspect (Mummendey & Schreiber, 1983). Rather, people consider other dimensions, less relevant to the salient hierarchy, to balance out the unfavorable outcome of the primary comparison and redeem some positive distinctiveness.

3.3.2 Focal domains, premises, and evidence
The DCM combines these two lines of work to unpack comparisons between groups (and also individuals; e.g., Terache, Yzerbyt, & Demoulin, 2020). Although DCM research focuses primarily on the perspective of the parties involved—as member of one of two groups or as one of two individuals—it also considers the observer perspective (see Table 1). Several premises follow (Table 1; see original studies below, and Cambon & Yzerbyt, 2016, 2018; Cambon et al., 2015; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005; Kervyn, Yzerbyt, Judd, & Nunes, 2009; Yzerbyt & Cambon, 2017; Yzerbyt, Kervyn, & Judd, 2008; for reviews, Yzerbyt, 2016, 2018).

3.3.2.1 People rate pairs of groups using the two fundamental dimensions in a compensatory manner

A full design involved members of two national groups, French and Belgians (Yzerbyt et al., 2005). Both groups were seen in positive terms but the more powerful and prestigious group, the French, was judged more Competent (*intelligent, capable, able to manage people, ambitious*) than Warm (*friendly, sociable, sincere, generous*), whereas the reverse pattern emerged for the less powerful group, the Belgians. Both groups agreed on the pattern while exacerbating the intergroup difference on their advantageous dimension. This compensatory pattern also emerged among observers, Swiss respondents, although the pattern proved more moderate.

In an experiment devoid of pre-existing stereotypes (for operational details, see tables 1 and 3 in Judd et al., 2005), participants read about behaviors allegedly performed by members of two fictitious groups, the Blues and the Greens. Whereas the two groups' behaviors differed on one dimension, the manipulated dimension (e.g., competence), they were equivalent and non-diagnostic on the other, the non-manipulated dimension (e.g., warmth). Resonating with the data from observers in Yzerbyt et al. (2005), group ratings showed compensation on the non-manipulated dimension. For instance, the group initially presented as more (less) competent came across as less (more) warm. Compensation also emerged when Judd et al. (2005) used a minimal group manipulation to make participants believe that they belonged to one of the two groups. Because there were no differences on the non-manipulated dimension in the information provided to the participants, these data go a long way to stress the inferential basis of compensation, going beyond what differences in actual status, power, and resources may instigate in terms of Warmth behaviors (see also, Yzerbyt et al., 2008).

Besides rating scales that often included the recently identified DPM facets for each dimension (Abele, Cuddy, et al., 2008; Abele et al., 2016; see also Carrier, Louvet, Chauvin, & Rohmer, 2014; Carrier, Mierop, Corneille, & Yzerbyt, 2020), compensation shows on indirect measures such as the abstractness of language or the dispositional attributions about group members' behaviors, suggesting that participants treat the compensatory traits as more deeply engrained features of the groups (Kervyn, Yzerbyt, & Judd, 2011). More recently, compensation also emerged in associations on a Brief Implicit Association Test (Schmitz & Yzerbyt, 2020) and in the visual characteristics attached to group members' faces produced via a reverse correlation technique, an unconstrained method tapping people's representations (Schmitz, Vanbeneden, & Yzerbyt, 2020).

Compensation materializes in the aggregated means and often in the individual negative correlations between Warmth and Competence (Yzerbyt & Cambon, 2017). Likewise, a compensatory pattern also emerges when the behaviors pertained to individual targets rather than groups. In general, compensation fails when participants consider the two dimensions for one target only (Judd et al., 2005) or one dimension at a time for many targets (Judd, Garcia-Marques, & Yzerbyt, 2019).

3.3.2.2 Compensation is unique to the two dimensions

Confirming the special status of the two dimensions (Warmth and Competence), a halo, rather than compensation, emerges when examining other characteristics (e.g., health; Yzerbyt et al., 2008). Compensation comes in a variety of forms (for reviews, Kervyn, Yzerbyt, & Judd, 2010; Yzerbyt, 2018). In the amplification phenomenon, coldness makes a Competent target even more Competent (Kervyn, Bergsieker, Grignard, & Yzerbyt, 2016; Kervyn, Judd, & Yzerbyt, 2009). In the innuendo effect, when information is lacking on one dimension, perceivers rely on compensation to complete their impression (Kervyn, Bergsieker, & Fiske, 2012). When they are concerned with strategic self-presentation, people compensate their low standing on one dimension by showing high standing on the other dimension (Lindholm & Yzerbyt, 2018; see also Holoien & Fiske, 2013). Finally, perceivers' reliance on compensation leads them to confirm their hypotheses in ways that run against the straightforward halo pattern observed in hypothesis confirmation. For example, participants informed about a target's Competence will preferentially ask questions that presuppose the target's *lack of* Warmth (Kervyn, Yzerbyt, et al., 2009).

3.3.2.3 Group characterizations are context-based but the two fundamental dimensions are not equally malleable

In line with the social identity approach (Turner et al., 1987), the DCM holds that the dimension that best characterizes a given group is highly sensitive to the comparison setting, and is informed by aspects of comparative and normative fit (see Oakes, Haslam, & Turner, 1994). The same target group may be perceived as more Competent than Warm, or the other way around, depending on the situation and the relevant comparison group (Cambon et al., 2015; Kervyn, Yzerbyt, Demoulin, & Judd, 2008; Yzerbyt & Cambon, 2017). For instance, observers judged Canada more (less) warm and less (more) competent when they also evaluated Japan (Brazil) than in a control condition with no other target country

(Kervyn et al., 2008). As for group members, Belgians judged Belgium warmer (less warm) and less (more) competent when they also evaluated Germany (Italy) compared to a control condition (Kervyn et al., 2008). Also, psychology majors judged their ingroup more or less competent (and less or more warm) as a function of the status of the comparison group (varying from nursing to medical majors) (Cambon & Yzerbyt, 2016; Cambon et al., 2015; see also Yzerbyt & Cambon, 2017).

Because Competence rests on power, status, and resources that function as reality constraints (Hornsey, 2008; Yzerbyt et al., 2005), Competence is more objective, more consensual, and less flexible than Warmth (Yzerbyt & Cambon, 2017). Being more subjective, Warmth inferences are more likely to polarize than inferences on Competence, and ingroup bias is more likely on Warmth than on Competence (Yzerbyt, 2018). Yzerbyt and Cambon (2017) had participants initially evaluate both their ingroup and the outgroup only on Competence or only on Warmth (before eventually rating both groups on the other dimension). As predicted, whereas high-status groups manifested a strong ingroup bias on Warmth, the lowest status group proved unable to claim superiority on Competence.

3.3.2.4 Boundary conditions: Conflict and absence of status differences preclude compensation

In the absence of a legitimate status difference or in the presence of a strong conflict, DCM predicts that no compensation emerges because both groups claim superiority. Two studies involving experimental and correlational evidence, minimal and real groups, and different kinds of conflict, confirm that compensation is more likely when the groups are in asymmetrical relation and share a cooperative view of the intergroup setting (Cambon et al., 2015).

In a minimal group experiment (Cambon et al., 2015), groups of participants filled in a bogus test measuring either their competence or their warmth. In the asymmetrical conditions, half of the group members received high scores and the remaining ones low scores on the manipulated dimension and joined one of two subgroups based on this score. In the symmetrical conditions, all participants received either a high or a low score on the manipulated dimension and joined the two groups on a random basis. Subgroups then went to separate rooms and completed a questionnaire. The questionnaire topic allowed manipulating symbolic conflict by informing subgroup members that the other subgroup in the session had either the same or a different view on the topic. Participants then rated their subgroup and the other subgroup on both dimensions. Fig. 3 shows the pattern
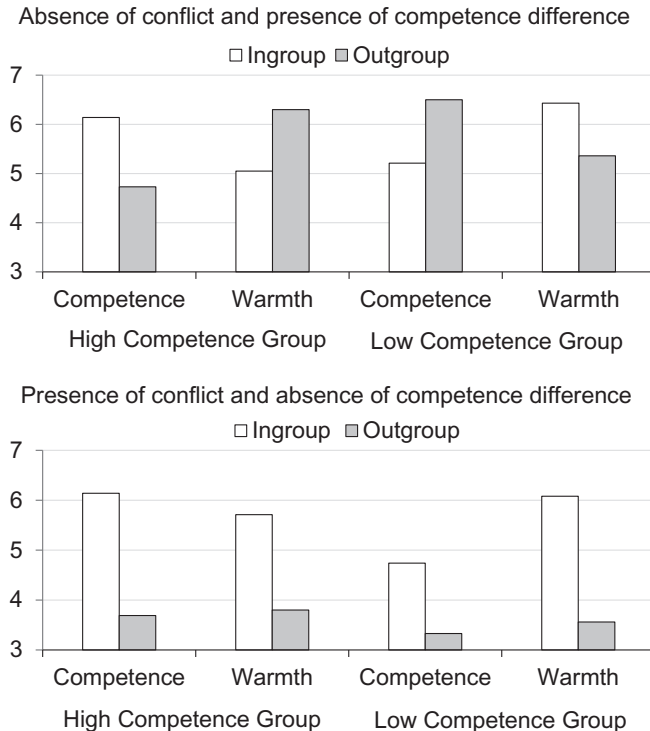
Absence of conflict and presence of competence difference

Presence of conflict and absence of competence difference

Fig. 3 Evaluation of ingroup and outgroup (1–7) on competence and warmth in the absence of conflict and presence of difference (top panel) and in the presence of conflict and absence of difference (bottom panel) when competence was the manipulated dimension of intergroup difference. *Adapted from Cambon, L., Yzerbyt, V. Y., & Yakimova, S. (2015). Compensation in intergroup relations: An investigation of its structural and strategic foundations.* British Journal of Social Psychology, *54(1), 140–158. https:// doi.org/10.1111/bjso.12067.*

of data when the manipulation concerned competence (the same pattern emerged with warmth as the manipulated dimension). In line with predictions, compensation emerged in the eyes of both groups when there was no conflict and presumably a clear intergroup difference on the manipulated dimension (see top panel). In contrast, the members of both groups expressed marked ingroup bias on both dimensions when there was conflict and no intergroup difference (see bottom panel). The difference in judgments between these two situations is particularly striking when participants rated the groups on the outgroup preferred dimension (warmth for high competent group and competence for the low competent group).

A second experiment involving real groups and a realistic conflict replicated these findings (Cambon et al., 2015). Of note, conflict had participants exacerbate the difference on the ingroup's preferred dimension, that is, Competence and Warmth for the more inferior outgroup and the more superior outgroup conditions, respectively. A follow-up study with natural groups, using a variety of hierarchical levels within two organizations, confirmed the impact of group differences for the emergence of compensation (Cambon & Yzerbyt, 2016). In all likelihood, a difference of status emerges as a preference for compensation over ingroup bias only to the extent that group members see the intergroup gap as sufficiently legitimate and stable (Cambon et al., 2015, Expt. 2; see also Dang, Liu, Liang, & Ren, 2017). These findings fit nicely with large-scale cross-national and cross-cultural studies revealing compensatory stereotypes preferentially in societies with unequal incomes (Durante et al., 2013) and in nations with intermediate level of conflict (e.g., United States, South Africa, and Peru), presumably because they provide stability to the system (Durante et al., 2017). Recent efforts look at the permeability of group boundaries (Dang et al., 2017), suggesting that the absence of permeability goes hand in hand with compensation (Bastart, Cambon, Schmitz, & Yzerbyt, 2020).

3.3.2.5 Underlying mechanisms: Different viewpoints entail different motives

According to DCM, different concerns may account for the same compensatory pattern of judgments, particularly as a function of people's vantage point. For observers, compensation likely flows from the structural constraints underlying the two dimensions on the one hand and justice concerns on the other. Indeed, different positions in the social hierarchy not only translate into differences on Competence, but the roles and norms associated with each position also shape the Warmth of each group. Specifically, the high-status group requires or demands that the low-status group behaves in certain ways. Compliance of the latter constitutes evidence for collaboration, that is, warmth. Next to these (often overlooked) situational constraints on the emergence of behaviors pointing to Competence and Warmth (Humphrey, 1985; Ross, Amabile, & Steinmetz, 1977), observers may also prefer a situation where each group has positive aspects, much in line with some sort of system-justification rationale (Kay et al., 2007). Not surprisingly, then, compensation shows both for direct and indirect measures among observers (Schmitz et al., 2020; Schmitz & Yzerbyt, 2020).

Because group members are directly concerned with their group's standing on the two dimensions, additional motives come into play. Compensation

rests on the search for positive distinctiveness and social creativity for low-status groups. Cambon and Yzerbyt (2018, Expt. 1) manipulated participants' need to protect their self-esteem by giving them an opportunity to self-affirm or not. This self-affirmation manipulation only affected low-status group members. Specifically, the ability to self-affirm protected their self-esteem from an upward comparison and precluded compensation. Self-affirmed low-status group members did not derogate the outgroup on Warmth, again showing the more subjective nature of Warmth.

As for high-status groups, compensation likely results from norms of non-discrimination, "noblesse oblige," and strategic concerns (Yzerbyt & Cambon, 2017). Cambon and Yzerbyt (2018, Expt. 2) manipulated the pressures toward non-discrimination by activating a non-discrimination vs an honesty norm. This norm manipulation only affected high-status group members. The honesty norm decreased the perceived pressures toward non-discrimination and paved the way to ingroup favoritism on both dimensions, in line with the less objective nature of Warmth. Not surprisingly, and in contrast to direct measures, compensation often fails to emerge on indirect measures among high-status groups (Schmitz & Yzerbyt, 2020).

Ironically, when high-status groups resist asserting superiority on all counts and low-status groups accept their situation by claiming communal qualities, this possibly sets the stage for continued exploitation. This may be an unavoidable tension (Dixon, Tropp, Durrheim, & Tredoux, 2010).

3.4 Several-group evaluation: Stereotype content model (SCM)

The SCM describes societal images of several groups, for example, given 21st century multicultural diversity. The SCM takes a functional approach, namely what people need to know, in order to interact with people from other groups. Distinct groups appear to have distinct images, evoke particular emotional prejudices, and receive systematic patterns of discrimination, all resulting from perceived social structure (status and interdependence; see Table 1).

3.4.1 Theoretical roots

Principles of stereotype content had been previously absent, the assumption being that broad principles of stereotyping processes apply equally to all groups (e.g., all outgroups elicit antipathy; Fiske, 1998). Person perception research provided one clue that stereotypes might have more dimensions, distinguishing social good–bad and task good–bad among personality traits (Asch, 1946; Rosenberg et al., 1968). Allport's (1954) prescient categorization

approach illustrated the then–current stereotypes contrasting Jewish people (intelligent but unpleasant) and Black people (unintelligent but easygoing). Further, Ambivalent Sexism Theory (Glick & Fiske, 1996) pioneered the concept of mixed stereotypes: competent but cold career women, incompetent but warm traditional women. Finally, functional approaches to social cognition (Fiske, 1992) suggested that people need to know others' intentions (Warmth) and capacity (Competence), in order to interact.

According to the SCM, group images differ on Warmth, seemingly benign or hostile intent, and on Competence, apparent ability to enact their intent (Fiske, 2018; Fiske et al., 2002; Fiske, Xu, Cuddy, & Glick, 1999). Societal ingroups, who seem both warm and competent (middle class, ethnic majorities), evoke pride. Outgroups usually come in three stereotypic clusters: Those allegedly low on both dimensions (migrants, homeless) evoke contempt; those incompetent but warm (old people, disabled people) evoke pity; and those competent but cold (rich people, entrepreneurial ethnicities) evoke envy. The varied images allow multicultural societies to differentiate at both ends of the SES ranks. Among the well off, societies usually designate the successful who belong to the ethnic majority as deserving, but the successful who belong to ethnic minorities as undeserving (because they are outsiders). At the low–income end, societies differentiate those who deserve help (e.g., old people) and those who do not (migrants) (see Fig. 4).

3.4.2 Focal domains

The SCM focuses on outgroup perceptions. Societal clustering of groups by Warmth and Competence extends both more specifically to individuals (Russell & Fiske, 2008) and more broadly across cultures (Bai, Ramos, & Fiske, 2020; Cuddy et al., 2009; Durante et al., 2013; Durante et al., 2017).

In typical SCM surveys, target–group selection has aimed to present relevant groups that all participants would find familiar in everyday discourse, so that the reported stereotypes would have ecological validity and predate the asking. As a functional theory, SCM needs judgments that people would make in daily life. So the goal has been to identify familiar groups named in ordinary language—concrete, imaginable, and manageable—all adding up to relatively close psychological distance reflecting normal interaction and impressions.

Standard SCM group selection asks participants to list: (a) What various types of people [their] society categorizes into groups; (b) which groups are considered very low status (to encourage mentioning untouchables); and (c) of which groups they consider themselves to be a member (to overcome
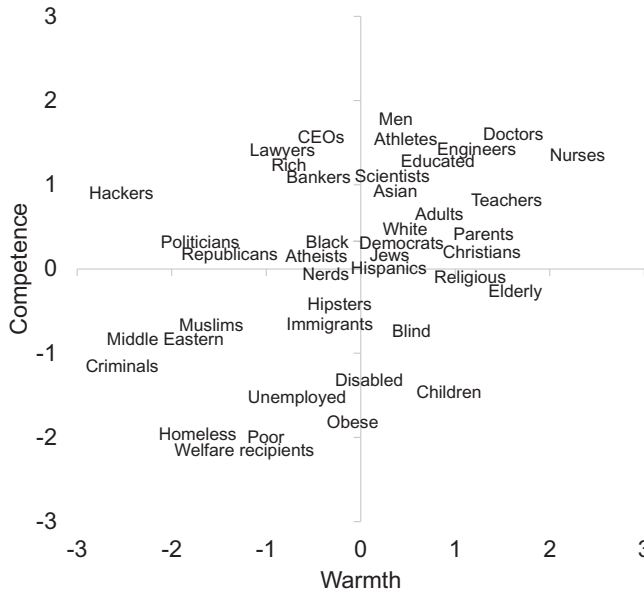
Fig. 4 Evaluation means for several societal groups as they fall in the quadrants of a Warmth by Competence space. Note that, compared to the typical SCM map, the two dimensions here switch, to make Competence Vertical and Warmth Horizontal, consistent with our adversarial integration. *Adapted from Nicolas, G., Bai, X., & Fiske, S. T. (2020b). Spontaneousstereotype content model: Taxonomy and process. (Under review).*

the taken-for-granted, unmarked ingroups). Groups listed by at least 15% of participants then appear in that country's questionnaires, each individual rating about 12 groups out of that society's roughly 15–25. Thus, the target groups are relatable, not abstractions.

3.4.3 Premises and evidence
SCM offers several premises (see original studies, Cuddy, Fiske, & Glick, 2007; Fiske et al., 2002, 1999; and recent reviews, Fiske, 2018; Fiske & Durante, 2016).

3.4.3.1 Primary dimensions are warmth and competence
Conceptually, the SCM defines Warmth as intent toward others, including both friendliness and trustworthiness. Competence is the ability to enact intent, including both capability and effectiveness. Operational definitions have shifted over time for Warmth and Competence (Fiske, 2018), but measures have modal items. Warmth ratings most often include *warm, friendly,*

and *sincere*, reflecting the DPM's recently identified two facets. *Good-natured, well-intentioned*, and *trustworthy* also appear. Competence measures most often include *competent* and *confident*, again reflecting DPM's two facets; *intelligent, capable, skillful,* and *efficient* also appear.

To minimize social desirability concerns, standard SCM studies introduce the task as personal opinions about society's beliefs; besides instructions to answer for society, each item repeats "To what extent do most [Americans] view members of this group as [competent]?" Though not identical, the reported societal stereotypes do overlap with individual responses (see below). In this empirical context, Warmth and Competence emerge separately in factor analyses conducted independently for each societal group (e.g., Fiske et al., 2002; Grigoryan et al., 2020). Internal consistency for the respective scales is high (Fiske & North, 2014). The scales correlate distinctively with antecedents and outcomes (see later premises), thereby showing predictive validity.

These two dimensions dominate spontaneous, open-ended descriptions of groups. Recently, as part of developing natural language dictionaries for spontaneous stereotype content (Nicolas, Bai, & Fiske, 2020a, 2020b), 201 online participants wrote up to ten descriptors for each of five groups drawn from 20 common in the literature. Preprocessing entailed spellchecking and lemmatizing (finding the root word, such as "run" for "ran"). Just 20% of the response words matched the 341 initial seed-words drawn directly from the five adversarial models described here. Expanding the seed-words to allow machine coding of more of the spontaneous responses used WordNet (Miller, 1998); the initially uncodable words served as search cues to related words.

The resulting dictionaries (14,449 words) captured 77% of participants' spontaneous responses. The top dozen preprocessed mentions (in descending order) were: Morality, Work, Health, Sociability, Feeling, Ability, Religion, Assertiveness, STEM, Inhabitant, Clothing, and Status. Adding together Morality and Sociability to compose Warmth yields 3,552 mentions; adding Ability and Assertiveness to compose Competence yields 1681 mentions. This suggests the priority of Warmth over Competence (fits SCM and DPM for perceiving others), as well as the priority of Morality (see BRM). Because the SCM posits societal structure as a causal variable, Work and Status (totaling 2417) are separate from Competence, in contrast to the ABC model combining them.

In a separate confirmatory study, these dictionaries accounted for 84% of spontaneous responses. Establishing the dictionaries' internal reliability used the semantic content in large text corpora to establish similarity metrics

(Word2Vec and Glove); reliability was high. The most interesting validity sample was obituaries, which describe a person in detail. Validity compared to human ratings was high. Capacity to code Warmth and Competence data compared with Agency-Communion dictionaries and LIWC dictionaries also favored these new dictionaries of Spontaneous Stereotype Content (Nicolas, Bai, & Fiske, 2020a, 2020b).

3.4.3.2 Stereotypes are not only unidimensional but also mixed

Across nearly 50 samples in nations on five continents (Durante et al., 2017), as well as the 50 states in the United States (Bai et al., 2020), the two-dimensional space provides an accessible cultural map often showing four clusters. Groups locate in each quadrant of the Warmth by Competence space, including mixed clusters combining high Warmth with low Competence or high Competence with low Warmth.

Mixed stereotypes often drive the Warmth-Competence correlation to zero. Use of mixed stereotypes characterizes more unequal societies (Durante et al., 2013) and moderately peaceful ones (Durante et al., 2017). In contrast, highly correlated Warmth and Competence indicate a simpler vector of evaluation, the middle-to-high clusters containing groups within the social safety net, contrasted to low-low outgroups (e.g., migrants, homeless, nomads, Roma, Bedouins). This simpler us-them division occurs in the most peaceful, equal societies (which support almost everyone, except for outcasts); it also occurs in the most conflicted societies, who split into us/them, friends and foes.

On an optimistic note, more diverse societies differentiate less among outgroups, lumping everyone into the ingroup ("we're all New Yorkers") (Bai et al., 2020). Less diverse countries, states, and colleges show more dispersed group images: Rural village residents, for example, may have distinct images of ethnic groups they have never met, so their SCM maps show dispersion. City-dwellers ride the subway next to people of global origins. If nothing bad happens (civil strife, political demagogues), people apparently habituate to diversity over time (Ramos, Bennett, Massey, & Hewstone, 2019).

3.4.3.3 Perceived interdependence predicts warmth; perceived status predicts competence

Interdependence is competition/cooperation over tangible and symbolic resources. Open-ended responses (Nicolas, Bai, & Fiske, 2020b) describe groups' interdependence indirectly, as familiarity and similarity to self, as well as cooperative subsumed under Warmth and competition subsumed under

assertiveness. More explicit, theory-driven interdependence scales measure cooperation (or not), shared values (or not) and shared resources (or not). Cooperative intent predicts perceived Warmth ("on our side"); competitive intent predicts low Warmth ("not on our side"). Interdependence-Warmth correlations are high, if interdependence includes both values and resources, and if Warmth reflects both friendliness and trustworthiness (Kervyn, Fiske, & Yzerbyt, 2015).

Status is prestige (recognition) and power (resources). Open-ended responses (Nicolas, Bai, & Fiske, 2020b) describe groups' Status as "advantaged," "affluent," "aristocrat," "billionaire," etc. A separate dictionary on the topic of Work describes occupations, which commonly confer status. Theory-driven, a priori Status items measure prestigious jobs and economic success. Status-Competence correlations are reliably high (Fiske & North, 2014). Belief in meritocracy (competence earns status) is worldwide—except for former Communist countries, whose residents are more cynical (Grigoryan et al., 2020).

3.4.3.4 Distinct emotions and behaviors follow from distinct warmth-competence combinations

Distinct emotions (pity, envy, admiration, contempt) differentiate the four Competence–Warmth combinations. Emotions hypothetically constitute affective prejudices that result from cognitive stereotypes. For specific emotional prejudices, SCM derives hypotheses from attribution theories of responsibility (Weiner, 1985) and social comparison approaches to assimilation and contrast (Smith & Kim, 2007; see Fiske et al., 2002, for rationale). Positive, controllable outcomes for groups assimilated to self (identity ingroups and reference groups) elicit pride. Positive, controllable outcomes for outgroups contrasted to self (outsider successes) elicit envy. Negative, controllable outcomes for groups assimilated to self (family in need) elicit pity. And negative, allegedly controllable outcomes for outgroups contrasted to self (the "voluntarily" destitute) elicit contempt and scorn. As rated by survey respondents, the four distinct emotions generally score higher in the predicted quadrant than in the other three (Fiske et al., 2002). What's more, neuro- and other psycho-physiological data support some of these predictions (see below).

Behaviors capture distinct discriminatory tendencies. SCM distinguishes active and passive discrimination, as a concept from aggression (harming) research—also applied to active and passive helping (Cuddy et al., 2007). Seemingly primary, the Warmth (us-them) dimension drives active

behaviors (active help/attack), and the secondary dimension, Competence, drives passive help and harm (associate/neglect). Although most evidence has relied on reported behaviors, recent economic-games data show that perceived Warmth predicts Trust-Game behavior (active help), and perceived Competence predicts Investment behavior (passive association) (Walsh, Fiske, & Vaida, 2020).

3.4.3.5 SCM dimensions apply to interpersonal interactions beyond societal judgments

Individual impression managers, given a goal of appearing warm or competent, increase those traits and decrease the other dimension's traits below a neutral goal (Holoien & Fiske, 2013); this is also consistent with the DCM. Interpersonal status confers Competence, and interpersonal cooperation confers Warmth (Russell & Fiske, 2008). In comparative contexts, the well-intentioned high-status prioritize conveying Warmth (which they stereotypically lack) over Competence (taken for granted), while the low-status prioritize conveying Competence (which they stereotypically lack) over Warmth (taken for granted; Swencionis & Fiske, 2018). In inter-racial interactions, the high-status group (Whites) also show a competence downshift, to convey their warm intentions (Dupree & Fiske, 2019).

Finally, a number of early social neuroscience studies focused in turn on each SCM quadrant's signature responses. For example, the low-low quadrant contains people who are homeless or drug addicted. Viewing decks of 100 photographs for each quadrant, participants being scanned indicated which of four emotions each photo provoked: Participants chose the predicted emotions for each quadrant. Specific to the low-low groups, they also activated neural networks involved in disgust (centrally, the insula) and failed to activate social cognition networks (medial prefrontal cortex, MPFC) that attribute a mind to the other. These dehumanizing patterns correlate with being reportedly unable to imagine these groups' minds and daily experience (Harris & Fiske, 2006). This quadrant is also the one most readily sacrificed in the trolley dilemma, again implicating the MPFC (Cikara, Farnsworth, Harris, & Fiske, 2010).

In another quadrant, the enviable rich and business professionals elicit envy, which manifests in Schadenfreude (malicious glee at their misfortune). Besides questionnaire reports to this effect, upon seeing a man in a bespoke suit having sat in chewing gum, people smile. As indicated by EMG recordings of the zygomaticus major, people smile at the everyday good events (a nice sandwich at lunch) for all quadrants except the envied group, whose

bad events make people smile (Cikara & Fiske, 2012). Schadenfreude toward an envied sports rival correlates with reports of having harmed their fans (Cikara, Botvinick, & Fiske, 2011). A third quadrant, inhabited by the ingroup and reference groups, is characterized by positive interdependence and expectations of cooperation. This configuration is perhaps represented by teamwork between peers, which predicts individuating attention to the other person's unexpected attributes (Erber & Fiske, 1984). The same relation activates the social cognition-attuned MPFC, uniquely to the other's distinctive attributes (Ames & Fiske, 2013). The fourth quadrant holds pathetic outgroups, who elicit pity and sympathy only when they accept their place, take responsibility, and cooperate with prescriptive norms (for ageism: North & Fiske, 2013a, 2013b; for disability: Wu & Fiske, 2020). The neural evidence is less established here.

3.5 Many-group evaluation: Agency-beliefs-communion (ABC) model

The final model examines how people spontaneously perceive the self in relation to the groups that form their society, including gender, age, racial, and ethnic groups, sexual orientations, occupational and recreational groups, political and religious groups etc.

3.5.1 Theoretical roots

A lot of research does not speak to spontaneous perception of societal groups, because of examining only a few researcher-selected groups or a few researcher-selected dimensions of social perception. Following methodologists calling for representative (a.k.a. ecological) sampling of stimuli and variables (Brunswik, 1955; Fiedler & Wänke, 2009; Wells & Windschitl, 1999; Westfall, Kenny, & Judd, 2014), the ABC model argues that capturing all and only the dimensions on which people spontaneously perceive societal groups requires unconstrained selection of the groups as well as dimensions by participants. With this approach, the ABC model emulates previous efforts to examine spontaneous social perception (e.g., perceiving faces, Oosterhof & Todorov, 2008; perceiving gender by race, Ghavami & Peplau, 2012). In sum, the ABC model's theoretical roots is the methodological tradition to examine spontaneous social perception without hypotheses built into the study materials that researchers present to participants, intentionally or not.

3.5.2 Focal domains

The ABC model employs this methodological tradition by interpreting participants' similarity ratings for participant-selected groups (Koch, Imhoff, Dotsch, Unkelbach, & Alves, 2016). Specifically, some participants name the groups that form their society, and other participants rate the similarity of the most frequently named groups, without instructions on how to construe similarity. Why similarity? To rate manifest similarity, participants must spontaneously select a latent dimension. For example, rating the similarity of doctors and bankers, people might think of Agency and thus rate them as "similar"; or, people might think of Communion and thus rate them as "dissimilar." The analytical techniques of multidimensional scaling and property fitting (Hout, Papesh, & Goldinger, 2013; Rosenberg et al., 1968) enable researchers to interpret (a.k.a. reverse-engineer) the dimensions that participants spontaneously selected to rate the similarity of the groups spontaneously selected by other participants. In this way, the ABC model aims to describe social perception under minimal constraints. So far, the ABC model has interpreted the dimensions on which people spontaneously perceive not just societal groups (Koch, Imhoff, et al., 2016; Koch, Imhoff, Unkelbach, et al., 2020, but also holders of all sorts of jobs (Imhoff, Koch, & Flade, 2018), residents of all U.S. mainland states (Koch, Kervyn, Kervyn, & Imhoff, 2018), and keepers of all sorts of problematic secrets (Slepian & Koch, 2020). Ongoing work looks into how people spontaneously perceive first names and product brands.

3.5.3 Premises and evidence

Emergent dimensions are Agency, Beliefs, and Communion. The ABC model proposes Agency-and-socioeconomic success (A) to summarize ratings of *powerless-powerful, low status-high status, dominated-dominant, poor-wealthy, unconfident-confident*, and *unassertive-competitive*. Conservative–progressive Beliefs (B) summarizes stereotypes about *traditional-modern, religious-science-oriented, conventional-alternative,* and *conservative-liberal*. Lastly, Communion (C) summarizes ratings of *untrustworthy-trustworthy, dishonest-sincere, threatening-benevolent, repellent-likable, cold-warm,* and *egoistic-altruistic*.

3.5.3.1 People spontaneously perceive societal groups on agency, beliefs, and communion

In the typical ABC model study (Koch, Imhoff, Unkelbach, et al., 2020), participants map (spatially arrange) the similarity of the societal groups named most frequently by previous participants. Specifically, participants use their mouse to drag and drop boxes that display group names back

and forth on a blank computer screen (Koch, Speckmann, & Unkelbach, 2020). Their only instruction is to map more similar groups closer together, and to map more dissimilar groups further apart. This task makes them spontaneously select at least one latent dimension to map the groups' similarity (i.e., rating manifest similarity always raises the question "[dis]similar with respect to what?"). Next, participants rate the groups on several unambiguous dimensions that might explain the dimensions they spontaneously selected to map the groups' similarity. Finally, (the groups' distribution in) each participant's similarity map is predicted from (the groups' distribution on) each unambiguous dimension as rated by the same participant. The aim is to explain as much group variance as possible in the similarity maps by group variance on as few as possible unambiguous dimensions.

In two studies (Koch, Imhoff, Unkelbach, et al., 2020), for example, Agency, Beliefs, and Communion parsimoniously explained the dimensions that U.S. participants had spontaneously selected to map the similarity of the 30 most frequently named U.S. groups. These three dimensions replicated for three alternative ways to rate the groups' similarity: rating pairs of groups on *very dissimilar-very similar*, sorting dissimilar groups into different piles and similar groups into the same pile, and naming the dimensions that best distinguish between the groups (Koch, Imhoff, et al., 2016). The three dimensions also replicated for two alternative types of groups, namely job holders (Imhoff et al., 2018) and state residents (Koch et al., 2018). The ABC model concluded that people spontaneously perceive a variety of groups on Agency, Beliefs, and Communion (Koch & Imhoff, 2018).

3.5.3.2 People perceive groups' beliefs as opportunities for exploitation vs exploration

Agency and Communion are fundamental dimensions of social perception (Abele et al., 2020), because they serve the ancient, existential goals to get ahead (by mastering tasks; i.e., Agency) and get along (by forming bonds; i.e., Communion). More recently, the ABC model examined whether the Beliefs dimension also serves an ancient, existential goal, namely to optimize exploitation of available resources (i.e., maintaining the status quo) and exploration of riskier but possibly better alternative resources (i.e., making changes). Exploiting can result in missing major opportunities, and exploring can result in sunk costs. Thus, people routinely ask themselves "Should I stay or should I go?," re-assessing whether to maintain or change how they look, what they eat, own, and do for work and beyond, where they live and travel, and whom they meet and see. Societal groups with conservative

and progressive Beliefs provide ideas and opportunities for exploitation (e.g., regional cuisine) and exploration (e.g., bisexuality), respectively. Thus, people could spontaneously perceive groups' Beliefs in order to inform and perform their decisions to maintain the status quo vs make changes.

In a series of studies (Koch, Imhoff, Dotsch, Unkelbach, & Alves, 2020), participants decided one step at a time whether to settle for their current reward (i.e., exploitation) or further increase it by pumping more air into a virtual balloon that would burst at some point and thereby obliterate the entire reward (i.e., exploration; Lejuez et al., 2002). In other studies, participants decided a limited number of times whether to draw from a card deck with known probability of winning another bit of reward (i.e., exploitation) or explore among four unknown card decks (Bechara, Damasio, Damasio, & Anderson, 1994). In all studies, half the participants learned that exploitation is the better strategy (i.e., the balloon burst early, or the familiar card deck had the highest probability of winning); the other half of participants learned that exploration is superior.

Next, participants selected delegates who would play the same balloon or card game and thereby accumulate reward for themselves as well as the participants. Results showed that participants delegated playing both games to members of conservative societal groups if they had learned that exploitation wins a greater total reward. In contrast, they delegated to members of progressive groups if they had learned that exploration is superior. In sum, participants perceived conservative and progressive Beliefs as opportunities for profitable exploitation and exploration, respectively (Koch, Imhoff, Dotsch, et al., 2020). Given that optimizing these two complementary behaviors is an ancient, existential goal (Mehlhorn et al., 2015), the ABC model argues that, in addition to Agency and Communion, Beliefs is a third fundamental dimension of social perception (see also Sagiv, Roccas, Cieciuch, & Schwartz, 2017; Schwartz & Bilsky, 1987, 1990).

3.5.3.3 Perceived self-group similarity on agency and beliefs independently predict perceived communion of groups, and prosocial behavior toward them

In three studies, the ABC model examined how the relation between impressions of societal groups' Agency, Beliefs, and Communion varies across perceivers. Participants rated the self and the 42 most frequently named U.S. groups on Agency, Beliefs, and Communion. Perceived similarity on Agency between the self and a group predicted perceived Communion of that group. Perceived self-group similarity on Beliefs

independently predicted perceived Communion of groups, and this relation was roughly twice as strong. Another study manipulated perceived self-group similarity on Agency or Beliefs and measured perceived Communion of groups, and in two reverse conditions manipulated perceived Communion of groups and measured perceived self-group similarity on Agency or Beliefs. The effects of perceived self-group similarity on Agency and Beliefs were roughly twice as strong as the reverse effects of perceived Communion of groups, suggesting that when perceiving a large number of groups, people infer a group's Communion from perceived self-group similarity on Agency and Beliefs, and not so much vice versa (Koch, Imhoff, Unkelbach, et al., 2020).

This results in different relations between the three dimensions, depending on the perceiver (see also Stolier, Hehman, & Freeman, 2018). For low-Agency perceivers, increasing a group's perceived Agency decreases that group's perceived similarity to the self and thereby the group's perceived Communion, resulting in a *negative* relation between groups' perceived Agency and Communion. For moderate-Agency perceivers, increasing a group's perceived extremity on Agency decreases that group's perceived similarity to the self and thereby the group's perceived Communion, resulting in a curvilinear, *inverted U-shaped* relation between groups' perceived Agency and Communion (see also Imhoff & Koch, 2017). For high-Agency perceivers, increasing a group's perceived Agency increases that group's perceived similarity to the self and thereby the group's perceived Communion, resulting in a *positive* relation between groups' perceived Agency and Communion. Likewise, the relation between impressions of groups' progressive Beliefs and Communion is negative, curvilinear, and positive for perceivers conservative, moderate, and progressive on Beliefs, respectively (Koch, Imhoff, Unkelbach, et al., 2020).

Thinking is for doing (Fiske, 1992), and thus social perception models have to stand the test of predicting behavior. To this end, the ABC model incentivized intergroup cooperation in one-shot prisoner's dilemma games. Participants played as a self-identified member of one of the 30 most frequently named U.S. groups, and played with one member of each group (i.e., 30 games). Players knew nothing about each other except their group memberships. Without communicating, they simultaneously transferred to each other between $0 and their full endowment of $1. What was transferred was doubled on the recipient's side, incentivizing mutual transfer (e.g., both players double up if they transfer their full endowment) as well as individual defection (e.g., players triple up if they receive

their counterparty's full endowment and transfer nothing to this counter-party, whereas the counterparty is left empty-handed). After the 30 games, participants rated all groups on Agency, Beliefs, and Communion, and then rated the self on these dimensions. Controlling for shared group member-ship, transfer increased with perceived self-group similarity on Agency and Beliefs (see Fig. 5), and this effect was almost entirely mediated by per-ceived Communion of groups. Thus, the ABC model explains behavioral cooperation across societal groups (Koch, Dorrough, Glöckner, & Imhoff, 2020; see also Jenkins, Karashchuk, Zhu, & Hsu, 2018).

Perceived self-group similarity on Beliefs better predicted cooperation for perceivers extreme (vs moderate) on Beliefs (see Fig. 5). Recently, the ABC model further examined this asymmetry. In a first study, partici-pants rated the 30 most frequently named U.S. groups and the self on Communion and Beliefs. Months later, participants further described their conservative, moderate, or progressive Beliefs, by rating their rarity,
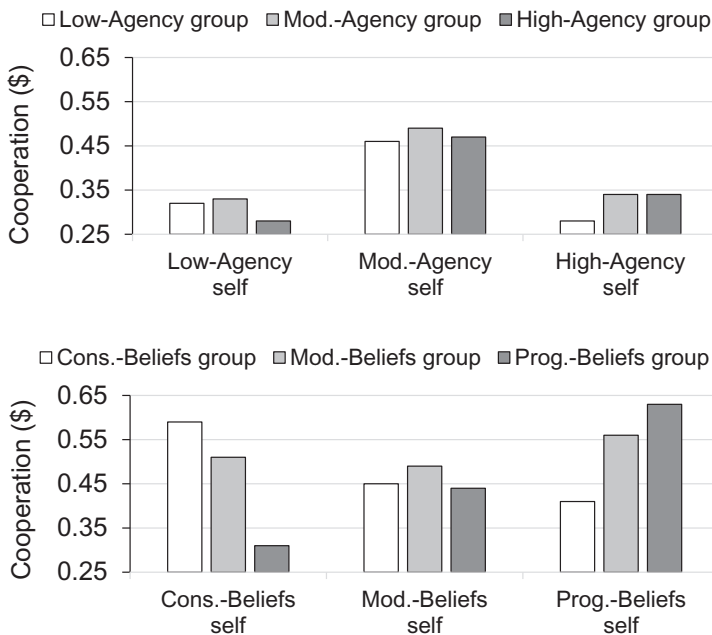

Fig. 5 Cooperation in the prisoner's dilemma game (i.e., transferring $0–1) by evalua-tions of many groups and the self on Agency and conservative-progressive Beliefs. *Adapted from Koch, A., Imhoff, R., Unkelbach, C., Nicolas, G., Fiske, S., Terache, J., et al. (2020). Groups' Warmth is a personal matter: Understanding consensus on stereotype dimensions reconciles adversarial models of social evaluation.* Journal of Experimental Social Psychology. *https://doi.org/10.1016/j.jesp.2020.103995.*

elaborateness (i.e., participants' knowledge about their Beliefs), importance to the self, entitativity (i.e., the homogeneity of people with their beliefs), and the amount of contact between people with their and other Beliefs. Results showed that perceived self-group similarity on Beliefs better predicted perceived Communion of groups for perceivers extreme (vs moderate) on Beliefs, and perceived importance to the self of own Beliefs mediated this effect. In a second study, participants distributed $0.06 between themselves and one member of each groups (i.e., they played 30 one-shot dictator games). Then, they rated the groups and the self on Beliefs, and the importance to the self of their own Beliefs. Again, perceived self-group similarity on Beliefs better predicted behavioral generosity for perceivers extreme (vs moderate) on Beliefs, and perceived importance to the self of own Beliefs mediated this effect (Woitzel & Koch, 2020).

3.5.3.4 Groups' communion is less consensual than groups' agency and beliefs

Many of the most frequently named societal groups are defined by their Agency (e.g., rich people, celebrities, middle class, blue-collar workers, homeless people etc.) or Beliefs (e.g., Republicans, religious people, Muslims, liberals, goths, and transgender people). Because definition entails consensus (i.e., the purpose of language is shared reality), people should agree on groups' Agency and Beliefs. The ABC model argues that these two dimensions (i.e., hierarchy and ideology) align and *structure* people's perception of their society. As groups and perceivers vary on Agency and Beliefs, and as perceivers infer groups' Communion from self-group similarity on Agency and Beliefs, groups' Communion should be less consensual, more personal. Thus, the ABC model posits that Communion is a *relational* dimension by which people personally navigate society, approaching and avoiding hierarchically and ideologically similar and dissimilar groups, respectively (Koch, Imhoff, Unkelbach, et al., 2020).

In four studies, United States, German, Indian, and South African participants differing on self-rated Agency and Beliefs rated the most frequently named U.S., German, Indian, and South African groups on Agency, Beliefs, or Communion, respectively. Across continents/countries, total rating variance decomposition (Xie, Flake, & Hehman, 2019) showed that perceivers agreed three to four times more on groups' Agency and Beliefs compared to Communion, and disagreed one to two times more on groups' Communion compared to Agency and Beliefs. So, indeed, groups' Communion was less consensual than groups' Agency and Beliefs (Koch, Imhoff, Dotsch, et al., 2020).

> ## 4. Intertwining our social evaluation models to generate new insights

At first glance, the five models provide conflicting, confusing answers to three questions. When navigating the social world, perceivers evaluate targets on what specific dimensions? What dimension has priority? And what is the relation between the dimensions? However, by reviewing the models' theoretical roots, focal domains, premises, and evidence, we delimited and clarified the aim and scope of each model.

The DPM (Abele & Wojciszke, 2007, 2014) examines *interpersonal* evaluation. In this first context, "Agency" has priority in evaluations of the self, whereas "Communion" dominates in evaluations of other individuals. The Behavioral Regulation Model (BRM; Ellemers, 2017; Ellemers et al., 2013) addresses *intragroup* evaluation. In this second context, "Morality" weighs more heavily than "Competence" and "Sociability" in various evaluations of (possible) ingroup members, including the self. The DCM (Yzerbyt, 2018; Yzerbyt et al., 2005) investigates *intergroup* evaluation. In this third context, "Competence" differences between two groups reverse on "Warmth," and vice versa, resulting in a negative relation between these evaluative dimensions. The Stereotype Content Model (SCM; Fiske, 2018; Fiske et al., 2002) looks into *several-group* evaluation. In this fourth context, several groups scatter across a two-dimensional "Warmth" by "Competence" space, and their distribution produces a zero or positive relation between the Big Two, depending on societal conditions. Finally, the ABC model (Koch, Imhoff, et al., 2016; Koch, Imhoff, Unkelbach, et al., 2020) speaks to *many-group* evaluation. In this fifth context, self-group similarity on "Agency" and "Beliefs" independently increase the "Communion" of many groups. Therefore, the relation between the first two and the third evaluative dimension is negative, inverted u-shaped, or positive, depending on the "Agency" and "Beliefs" of the self.

In sum, this systematic comparison reveals that social evaluation is a complex activity, varying from interpersonal to intragroup, intergroup, several-group, and many-group contexts. Each model examines a different context. Thus, their controversies about the content, priority, and relation of evaluative dimensions are more apparent than real. So, each model is uniquely valuable, and they complement one another by explaining more aspects of social evaluation together than alone by themselves. Moreover, combining the models' methods and analyses provides an opportunity for inspiring new insights about each social evaluative context (interpersonal etc.), as we show next.

4.1 Combining interpersonal and intragroup evaluation

The BRM and DPM have different research foci, with the DPM being more concerned with interpersonal evaluations and the BRM being more concerned with intragroup evaluations. They nevertheless share their interest in self-evaluation. The BRM stresses the important role of morality in self-evaluation (Ellemers et al., 2008; Leach et al., 2007; Pagliaro et al., 2011, 2016; Van Nunspeet et al., 2014; Van Prooijen & Ellemers, 2015). The DPM, in contrast, stresses and demonstrates the important role of Agency, particularly the facet of Assertiveness, in self-esteem (Abele & Hauke, 2018, 2019; Abele & Wojciszke, 2014; Hauke & Abele, 2019, 2020a; Wojciszke et al., 2011).

This raises the question of how to reconcile these seemingly contradictory findings. An attempt to resolve this was made by Hauke and Abele (2019) with their distinction of the self regarded as an actor ("I" as an acting person) or as an observer ("me" as how others see me). The actor self, which they referred to as "self-as-identity" should be more strongly related to Agency-Assertiveness—in line with standard predictions in the DPM. The observer self, which they indicated as "self-as-reputation," should be more related to Communion, specifically Morality—this would be the perspective on the self commonly examined in the BRM. In several studies with different methodologies, that reasoning was supported by the data (Hauke & Abele, 2019, 2020a). Hence, distinguishing between individual vs relational perspectives on the self might explain the discrepancy between observations made in these two models.

Indeed, Hauke and Abele (2020b) showed that a person's individual self-esteem is strongly tied to Agency (particularly Assertiveness), whereas an individual's relational self-esteem is additionally also tied to Communion (both Friendliness and Morality). A recent study by Soral and Kofta (2020) likewise showed that individual self-esteem is closely tied to Agency (they only assessed Agency-Ability), whereas collective self-esteem was most tied to Communion-Morality. In sum, differentiating between individual vs relational perspectives on the self can explain shifts in the dimension (or facet) that seems most important for self-evaluation, and can reconcile seemingly divergent predictions made by the DPM and the BRM.

Joint research projects will continue to compare and integrate predictions from the DPM and BRM, and will build on the general idea that different self-evaluative goals and comparison contexts activate different types of concerns as relevant moderators. This explains when and why either of the fundamental dimensions (or their facets) can dominate in people's

self-evaluations. Participants could, for instance, be invited to compare the self with others (social comparison), to activate the relational self, and the prediction would be that Communion is the more important dimension here. Or they could compare the current self with the desired self (temporal comparison), to activate the individual self, and here the prediction would be that Agency is more important.

Alternatively it could be examined whether participants tend to focus on Communion and the morality facet in particular when considering past behavior (self-enhancement looking back) while focusing on Agency when considering future opportunities (self-improvement looking forward). This would extend prior findings suggesting that concerns about relational vs task–relevant characteristics of the self and others can indeed shift depending on whether they anticipate an interaction or are actually engaged in it (Van Prooijen et al., 2018). Likewise, individuals shift in which traits they would prefer in others depending on the specific task to be accomplished. Whereas individuals always want to meet people who are friendly and trustworthy (Communion) they stress agentic qualities the more they are interdependent with the other person (Abele & Brack, 2013).

Future studies could establish how these different self-evaluative goals and comparison contexts activate different types of concerns, to explain when and why either the Agency or Communion dimension (or their specific facets) can dominate in self-evaluation. The overall goal would be to gain a better understanding of the conditions under which self-evaluations tend to focus on achievement aspects captured by facets of Agency (consistent with the DPM) and when self-evaluations are dominated by characteristics relevant to social interaction such as morality, as a facet of Communion (as found in the BRM).

4.2 Combining interpersonal and intergroup evaluation

Whereas the DCM primarily focuses on intergroup social cognition, the DPM concerns interpersonal cognition. In addition, the DCM primarily studies comparative contexts whereas the DPM studies interaction contexts. One aim of a DCM–DPM collaboration is therefore to study interpersonal cognition in a comparative context and thus to integrate predictions of both models (Abele & Yzerbyt, 2020). Recent research applied the "power pose" methodology (Carney, Cuddy, & Yap, 2010; see also Park, Streamer, Huang, & Galinsky, 2013; for a review, see Cuddy, Schultz, & Fosse, 2018), which has not been studied in dyadic interactions so far. In this

research, one of the participants took a power position and the other a submissive or neutral position.

Two premises of DPM are relevant here. First, the DPM holds that actors evaluate their behavior more in terms of Agency/Competence than observers do, whereas observers evaluate the actor's behavior more in terms of Communion/Warmth than actors do. A second premise of the DPM is that there is a general priority of Communion in describing both self and others and, relatedly, that ascribing Communion to both self and others is less variable than ascribing Agency (Abele & Wojciszke, 2014, for a review). Still, no DPM studies examined the possible moderating role of body posture. Predictions were that individuals in a power posture should perceive themselves as more agentic than people in a submissive posture do. Because Communion ascription is generally higher and less variable than Agency ascription, DPM would not state a specific prediction on the impact of power posing on perception of own and other's communion. Furthermore, Communion ratings should always be higher than Agency ratings.

As for the DCM, two premises also apply here. First, provided certain conditions are met (i.e., no conflict and large, stable, and legitimate differences in status; for reviews, see Kervyn et al., 2010; Yzerbyt, 2018), people will compensate between the Big Two. Second, there are greater reality constraints attached to Agency/Competence than to Communion/Warmth. Regarding interpersonal settings, the DCM studies showed some compensation pattern in judgments of others, but not in judgments of the self (Kervyn, Yzerbyt, et al., 2009, Expt. 3; Terache et al., 2020). The DCM predicts that people would rate the other person's Agency/Competence lower and the other person's Communion/Warmth higher when they are in a power posture than in a submissive posture. Additionally, people in a power posture should rate the submissive other lower on agency and higher on Communion than the self, whereas people in a submissive posture should rate the powerful other higher on Agency and lower on communion than the self. Building on the work by Kervyn, Yzerbyt, et al. (2009) and Terache et al. (2020), the DCM would not predict compensation in self-judgments.

Abele and Yzerbyt (2020) conducted three studies in which they invited pairs of participants to ask each other questions while adopting opposing body postures (expanded vs restricted; expanded vs neutral; Carney et al., 2010; Park et al., 2013) allegedly as a means to study the impact of body posture on memory performance. Whereas one person adopted a power posture, the other displayed a submissive (Expt. 1 and 2) or neutral (Expt. 3) posture. At

the end of the interaction, both participants evaluated each other on the Big Two—ostensibly as a distraction task—before recalling their answers.

The findings showed that participants in a power posture rated the self higher and the other lower on agency whereas those in a submissive (and in a neutral) posture rated the self lower and the other higher on agency. In Experiment 2, participants in a submissive posture also rated their communion lower than they rated those in a power posture (see Fig. 6). Experiment 3 revealed compensation effects for participants in a power posture, but not for those in a submissive posture. Stated differently, the effects of body posture are robust, as indicated by the strong effect of power vs submissive or neutral posture on the perception of Agency of the self and the other. At the same time, they are also context-dependent. Firstly, people in a power posture—but not those in a submissive or neutral posture—showed compensation with respect to the interaction partner being in a submissive or neutral posture. Secondly, being in a submissive posture did not only lead to lower self-perception on agency, but also to lower self-perception on communion. Taken together, these findings are theoretically important as they show that the strategy of compensating between both dimensions in self-ratings seems to be limited to persons in a higher position (see Fig. 6). This is an important finding for the DCM.

Regarding the DPM, perspective had no effect. In all likelihood, the relatively extreme body postures and the standardized behavior (memory task)
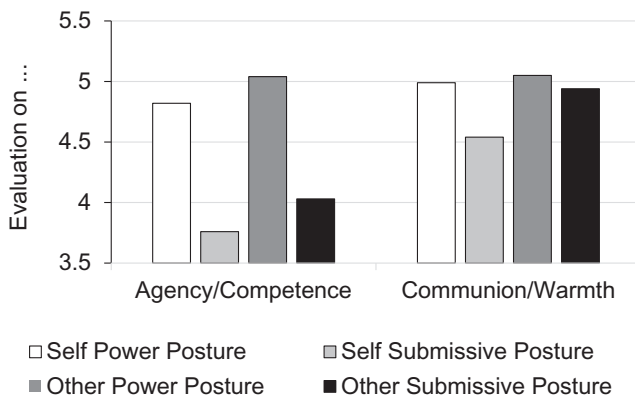

Fig. 6 Evaluation of the self and a conversation partner. One was instructed to maintain a powerful posture, the other a submissive posture. The evaluative dimensions were Agency/Competence and Communion/Warmth. *Adapted from Abele, A.E. & Yzerbyt, V. (2020). Body posture and interpersonal perception in a dyadic interaction: A Big Two analysis,* European Journal of Social Psychology. *(Under review).*

analyzed in the present experiments are strong situational cues that override actor/observer perspective effects. At the same time, the generally higher ratings of communion than agency support the DPM prediction of the priority of Communion. Further work is required to understand these interpersonal situations characterized by subtle or not so subtle differences in status, power, and resources (related to Agency). In addition, it would be important to examine the impact of differences in aspects that shape the Communion dimension on the evaluation with respect to the Agency dimension.

4.3 Combining several-group and many-group evaluation

The SCM concentrates participants' minds on a few (~12) proximal groups, considered one at a time on several dimensions (traits, feelings, behavior etc.). Arguably, participants are cued for an interpersonal, relational context. In contrast, the original ABC model cued participants for a more analytic, abstract context—evaluating dozens of distant groups on a meta-judgment, namely similarity. Only afterward did ABC participants assign a name to the dimensions of similarity. Thus, proponents of the ABC model, SCM, and DCM (Nicolas et al., 2020) examined interpersonal and analytic goals as moderators of the use of the different stereotype dimensions. In a series of studies, participants described what they would need to know about a new group (a) moving to their neighborhood (interpersonal relational goal) or their nation (analytic, abstract goal), (b) when they themselves were moving to the other's neighborhood or nation, and (c) when they had an explicit goal either to interact with the others (relational) or to understand them in a societal context (analytic).

  Across studies, analyses of ratings on traditional scales, natural language, and real-time information gathering behavior confirmed that goals moderated what people wanted to know about a novel group (see Fig. 7). Interest in the Sociability facet of Communion/Warmth was particularly marked when participants' instructed goal was interpersonal interactions with the novel group. On the other hand, the ABC model dimensions of socioeconomic Status (a facet of the ABC model's Agency dimension) and conservative-progressive Beliefs had higher priority when people's instructed goal was to understand the novel group in a societal context. Moreover, the Morality facet on average was the highest priority and did not differ by goal, consistent with the BRM. These findings provide one avenue to integrate current models of stereotype content by positing that interpersonal vs epistemic perceiver goals determine dimension priority.
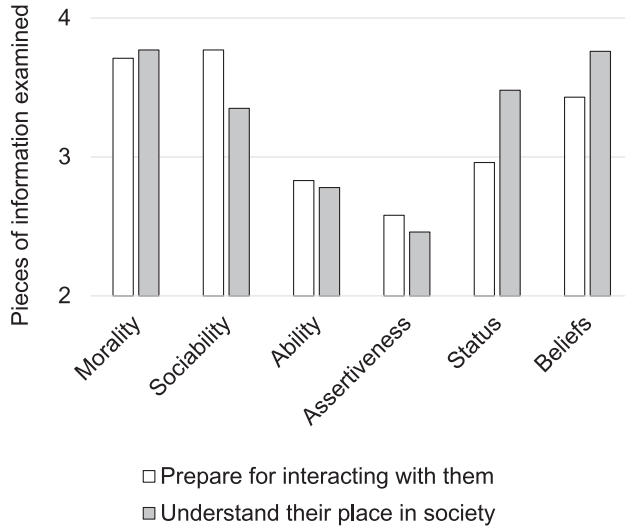
Fig. 7 Number fading boxes examined to learn an unknown group's high or low eval-
uation on morality, sociability, ability, assertiveness, status, and beliefs (i.e., real-time
information gathering behavior). Instructions were to prepare for interacting with
the group, or understand their place in society. *Adapted from Nicolas, G., Fiske, S. T.,
Terache, J., Carrier, A., & Yzerbyt, V., Koch, A., Imhoff, R., & Unkelbach, C. (2020).
Relationalversus structural goals moderate social information-gathering priorities.
(Under review).*

4.4 Combining intergroup and many-group evaluation

The DCM holds that perceivers prove highly sensitive to reality constraints
such as power, status, and resources in their judgments of Competence/
Agency. Provided some conditions are met (e.g., there is no strong conflict),
the more competent group will generally be judged as less warm than the other
group. For the ABC model, judgments of a target group's Communion
decrease with the distance on Agency that perceivers experience between
the self and the target group. In short, whereas both models propose that dis-
tance between the perceiver and a target group on the dimension of
Competence/Agency plays a role, the DCM, but not the ABC model, con-
siders that the direction of the difference (which group is high and low on
Competence/Agency?) also contributes to the final evaluation on Warmth/
Communion.

     A collaboration between the DCM and ABC model allows digging into
this issue in a more systematic manner. One fruitful line of research would be
to examine the currently available data collected in the context of the ABC

model. In particular, one could capitalize on questionnaires in which respondents provide information on a large panel of (randomly selected) groups as well as about themselves with respect to dimensions of Competence/ Agency and Warmth/Communion (see for instance, Koch, Dorrough, Glöckner, & Imhoff, 2020; Koch, Imhoff, Unkelbach, et al., 2020). To do this, one could enrich the prediction of respondents' Communion ratings of a series of groups based on the distance between their self-ratings and the target group ratings on Competence/Agency by including a predictor that embodies the direction of the distance.

A series of recent experiments (Yzerbyt, Koch, & Barbedor, 2020) made sure that the Competence/Agency distance from the self would be the same for different target groups. Participants in the role of observer first positioned themselves on a social status scale (Goodman et al., 2001) before imagining a group located two ranks above them and another located two ranks below them. All participants then evaluated these groups on competence and warmth. Confirming the impact of social status on judgments of competence, participants judged the group above them more competent than the group below them. Importantly, the ratings on warmth were not only significantly different but, in line with the DCM, the group occupying a lower social status than participants came across warmer than the group enjoying a higher social status. Other experiments are currently under way to further explore this effect. For instance, it might be that the difference in warmth observed in the initial studies decreases or even vanishes when, as in the typical ABC model study, more than two groups are evaluated.

4.5 4.5. Combining many-group, intergroup, and several-group evaluation

Participants in ABC model studies always perceived dozens of societal groups (e.g., Koch, Alves, Krüger, & Unkelbach, 2016). As people rarely encounter more than a few groups in a situation, the ABC model arguably examines how people structure their social environment at a distance. In contrast, participants in SCM studies typically perceive a few groups only, and thus the SCM arguably examines how people relate to groups they encounter in a situation (Koch, Imhoff, Unkelbach, et al., 2020; Nicolas, Fiske, et al., 2020). Obviously, the ABC model would be more useful if it explains perception of both many distant and a few proximal groups. To this end, the ABC model, inspired by the SCM, recently examined

whether, when, and why people spontaneously select Agency, Beliefs, and Communion to perceive a few groups.

Tversky (1977) and Turner et al. (1987) argue that people's attention to a dimension should increase with increasing *intergroup* differences on that dimension divided by decreasing *intragroup* differences on the dimension (i.e., meta-contrast ratio). In this context, the DCM argues that differences between groups on Competence tend to be larger than their differences on Warmth, and thus Competence (vs Warmth) is more likely to grab attention. For the ABC model's venture into explaining perception of a few groups, the DCM and meta-contrast ratio imply, for example, that people should be more likely to spontaneously select Agency (i.e., focusing on Agency without being asked to do so) when they see one group as high on Agency and another group as low on Agency, compared to seeing both groups as high or low on Agency (see also Alves, Koch, & Unkelbach, 2018; Lammers, Koch, Conway, & Brandt, 2017). Moreover, people should be more likely to spontaneously select Agency when they see all members of one group as high on Agency and all members of another group as low on Agency, compared to seeing substantial variation around high and low Agency in the first and second group, respectively.

In a series of studies (Henzel, Koch, Imhoff, Unkelbach, & Alves, 2016), participants mapped the similarity of eight randomly selected societal groups, or eight groups they had recently encountered offline or online. Next, they rated the Agency, Beliefs, and Communion differences *between* as well as *within* these groups. Results showed that participants were more likely to spontaneously select Agency, Beliefs, and Communion to map the groups' similarity when they saw larger intergroup differences on Agency, Beliefs, and Communion, respectively. In contrast, perceived intragroup differences on the three dimensions hardly varied from group to group, and thus had no effect on how participants mapped the similarity of the groups. Participants in another study named the dimension that best distinguishes between only two randomly selected groups, and then rated the Agency, Beliefs, and Communion differences between as well as within these groups. Perceived intergroup differences on Agency, Beliefs, and Communion again predicted spontaneous selection of Agency, Beliefs, and Communion, respectively (see Fig. 8). Perceived intragroup differences again hardly varied from group to group, and thus again had no effect.

In a final study, participants rated the utility of Agency, Beliefs, or Communion for distinguishing between artificial groups (a.k.a. diagnosticity).
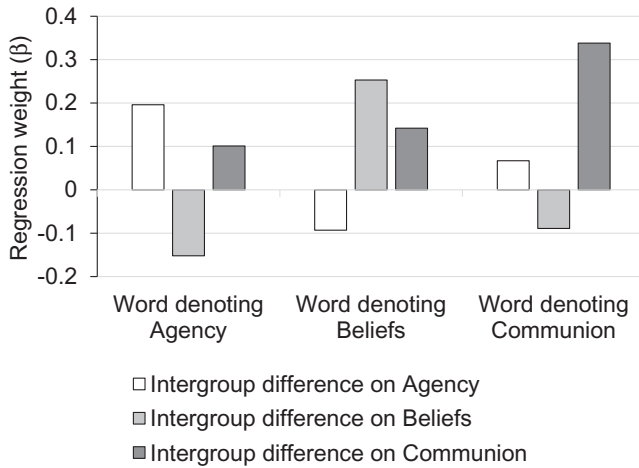
Fig. 8 Results of multiple regression analyses predicting the perceived extent to which a one-word distinction of two groups denotes Agency, Beliefs, and Communion from the perceived intergroup difference on Agency, Beliefs, and Communion evaluated at the end of the study. *Adapted from Henzel, P., Koch, A., Imhoff, R., Unkelbach, C., & Alves, H. (2016). Stereotypediagnosticity increases stereotype usage. (Manuscript in preparation).*

Consistent with Tversky's (1977) and Turner et al.' (1987) meta-contrast ratio, the perceived diagnosticity of Agency, Beliefs, and Communion did not increase when Agency, Beliefs, and Communion was manipulated to feature larger intergroup differences blurred by larger intragroup differences. In sum, perception of artificial groups was sensitive to manipulated Agency, Beliefs, and Communion differences between as well as within the artificial groups. However, spontaneous perception of a few randomly selected societal groups was sensitive to natural Agency, Beliefs, and Communion differences between but not within the societal groups, because perceived intragroup differences on Agency, Beliefs, and Communion hardly varied from group to group, respectively (Henzel et al., 2016). This non-equivalence of examining artificial vs societal groups is a prime example for the value of ecological sampling (Brunswik, 1955; Fiedler & Wänke, 2009; for other examples, see Alves, Koch, & Unkelbach, 2016, 2017; Koch, Alves, et al., 2016).

In sum, the ABC model, inspired by the SCM and DCM, recently found that Agency, Beliefs, and Communion explain spontaneous perception of a few proximal groups, too. The higher the differences between those groups on Agency, Beliefs, or Communion, the more likely people spontaneously select that dimension to perceive the groups (Henzel et al., 2016).

5. From adversarial positions to model comparison, combination, and integration

The collaboration between our seemingly conflicting models turned out to be productive, but was not easy. It required agreed-on norms and planned behaviors that we described in detail elsewhere (Ellemers et al., 2020). We briefly review this contribution below so as to concisely situate the above comparison and combination of the models in an approach and procedure that may be helpful for other multi-theory collaborations.

Many more researchers contributed to the models than the five authors of the present contribution. But to keep the collaboration efficient, we settled for one representative per model who would confer with their collaborators. We committed ourselves to convene in a hotel for a week to make five concentrated, morning-to-afternoon pushes and thereby kick the collaboration off by making great, motivating progress. To make good use of that time, everyone sent around a five-page, up-to-date précis of their model a few weeks before our get-together. This proved to be important for a second reason. Reading those texts made everyone realize that each model is supported by solid evidence (i.e., cannot be all wrong) and addresses some but not other aspects of social evaluation (i.e., perceivers, targets, contexts, goals, and dimensions). In our first face-to-face discussion, those collective impressions found expression in a plan to constructively negotiate the aim and scope of each model rather than to destructively question their validity. That plan showed respect for each researcher and their model, and thereby built trust. We knew that without trust, open-minded, non-zero-sum negotiation would be next to impossible.

To maintain trust and team spirit, we put further measures in place: First, a norm to make no difference between senior, mid-career, and junior collaborators. Second, reminders that failure to communicate an agreement would leave readers of the social evaluation literature with their confusion about the seemingly conflicting models. Third, elaborating our plan by setting the goals to clarify the unique aim and scope of each model, to integrate the models in a framework that resolves their apparent controversies, to innovate each model as inspired by the other models, and to communicate both the outcomes and process of the collaboration. (We set goals number three and four way later than in that week in the hotel.) And fourth, we enjoyed ourselves at a different restaurant each night, because people like to work with people they like. After all, sharing palatable joys increases cooperation (Woolley & Fishbach, 2019).

During and after that week, progressing toward those goals brought to the scene the usual suspects of laborious behaviors, such as taking notes of our discussions, developing those bullet points into proper paragraphs, deciding on their order and the length of paper sections, taking turns to revise text, video calls to discuss major changes etc. That road was riddled with disagreements on content and style, miscommunication of tasks, and other-duty delays, but highly esteeming our team, eyes on the prize, and encouragement from colleagues and eventually journals kept us going. Three years down the road, what is our contribution to the science of social evaluation?

First, we delimited and clarified the aim and scope of each model of social evaluation. The DPM, BRM, DCM, SCM, and ABC model examine the content, priority, and relation of dimensions in the context of interpersonal, intragroup, intergroup, several-group, and many-group evaluation, respectively (see Table 1).

Second, we combined the models to generate new insights. Together, the DPM and BRM examined the priority of Vertical vs Horizontal in evaluations of the self. It seems that Vertical is primary in evaluations of the self's identity (i.e., "how I see me"), whereas Horizontal is primary in evaluations of the self's reputation (i.e., "how others see me"). In a second combination, the DPM and DCM looked into the relation of the Big Two in evaluations of the self facing one other individual. When the self was manipulated to signal higher power, Vertical and Horizontal evaluations of the self (vs that other individual) turned out to be higher and lower, respectively. That evaluative compensation did not generalize to when the self was manipulated to signal lower power, however. The finding clearly shows the limits of compensation, particularly for persons in low status. In a third combination, the SCM and ABC model examined dimensional priority in evaluations of a new, unknown group. Results showed that Horizontal is more important (vs Vertical and Beliefs) in gathering information about a proximal (e.g., new in the neighborhood), whereas Vertical and Beliefs are more important (vs Horizontal) in learning about a distal group (e.g., new in the nation). In a fourth combination, the DCM and ABC model look into the relation of the Big Two in evaluations of societal groups that differ in status, to test if the compensation that emerges in the evaluations of two groups also shows when more than just two groups are involved. A fifth combination between the DCM, SCM, and ABC model examined dimensional priority in evaluations of a few societal groups. A dimension's priority increased with differences between those groups on that dimension.

Third and finally, in a separate theoretical paper we integrated the models in an all-context framework that specifies goals and processing modes to resolve their controversies about the content, priority, and relation of social evaluative dimensions (Abele et al., 2020).

We resolved the controversy about *content* as follows. Because the definition, labeling, and measurement of Agency (DPM and ABC model) and Competence (BRM, DCM, and SCM) largely overlap, we subsumed those dimensions under the model–neutral term *Vertical*, a symbol for the existential goal to get ahead with own plans. Moreover, consistent with the DPM, we differentiated two facets of the Vertical dimension. First, the relatively more cognitive facet of ability, often measured in terms of items such as talented, smart, skilled, and competent. And second, the relatively more motivational facet of assertiveness often measured in terms of items such as driven, confident, assertive, and competitive (see also Carrier et al., 2014).

Also due to a large overlap in definition, labeling, and measurement, we subsumed Communion (DPM and ABC model) and Warmth (DCM and SCM) under *Horizontal*, to symbolize the existential, ancient goal to get along and form alliances with others on the same side and level. Consistent with the DPM and BRM (Abele et al., 2016; Leach et al., 2007), we differentiated two facets of the Horizontal dimension. First, the relatively more intentional facet of morality, often measured in terms of the items honest, benevolent, moral, and trustworthy. And second, the relatively more emotional facet of friendliness, often measured in terms of the items warm, friendly, funny, and sociable.

Vertical and Horizontal describe social evaluation *generally*. For some *specific* contextual goals and perceiver and target types and numbers, describing social evaluation requires the facets of Vertical and Horizontal and/or additional dimensions (e.g., attractiveness, fitness, and health). To illustrate, socioeconomic Status (possibly a third facet of the Vertical dimension) and conservative-progressive Beliefs (possibly a third facet of the Horizontal dimension) play an important role in evaluating many societal groups, as shown by the ABC model (Koch, Imhoff, Dotsch, et al., 2020).

We resolved the controversy about *priority* by specifying three goals. First, if the goal is accurate and consensual social evaluation through bottom–up processing (i.e., maximizing the *pragmatic diagnosticity* of social evaluation), the Vertical dimension has priority. According to the DCM, the clues for Vertical (vs Horizontal) evaluation tend to be more objective (i.e., part and parcel of the target[s]), obvious, time-/situation-stable, and undeniable, such as positions, degrees, and assets. Consistent with this idea, the SCM argues that

social rank is the socio-structural clue for evaluating groups on the Vertical dimension. The ABC model agrees, arguing that Vertical (vs Horizontal) clues define more targets (e.g., working, middle, and upper class, students, and millionaires), which adds to the clues' higher objectivity (Koch, Imhoff, Unkelbach, et al., 2020). Thus, perceivers tend to first evaluate targets on the Vertical dimension when their goal is accurate and consensual evaluation.

In a cooperative context, for example, legitimate and large intergroup differences in status/power occur frequently and afford accurate and consensual translation to intergroup differences in Vertical evaluations. Subsequent Horizontal evaluations compensate intergroup differences in Vertical evaluations more often than vice versa, as shown by the DCM (Yzerbyt, 2016, 2018). Relatedly, the ABC model finds that evaluations of societal groups on the Vertical (vs Horizontal) dimension vary more and are more consensual (i.e., accurate in the eyes of others; Koch, Imhoff, Dotsch, et al., 2020). And research by the SCM shows that spontaneous descriptions of these groups tend to begin with Vertical (vs Horizontal) terms, presumably because the task to describe them to an unspecified audience activates the goal to provide accurate and consensual information (Nicolas, Bai, & Fiske, 2020a, 2020b).

Second, if the goal is strategic and personal evaluation of social targets through relatively more top-down processing (i.e., maximizing the *subjective weight* of social evaluation), perceivers prioritize the Horizontal dimension. According to the DPM, BRM, and SCM, Horizontal (vs Vertical) evaluations are more informative about social targets' good, opportune or bad, challenging intentions and strategies toward the perceiver. Thus, Horizontal evaluation is especially pressing (i.e., has priority) when preparing to interact with the social targets, as their intentions and strategies are most likely to materialize and have a great impact on the perceiver in upcoming social interactions (Abele et al., 2020).

Consistent with this prediction, DPM research shows that people find it more important that their peers and friends score high on the Horizontal (vs Vertical) dimension (Abele & Wojciszke, 2007). Similarly, the SCM finds that people are more eager to evaluate an unfamiliar group on the Horizontal (vs Vertical) dimension when this group is new in the neighborhood, which implies social interaction (Nicolas, Fiske, et al., 2020; see also Brambilla et al., 2013). And when social interaction means joining a group, contributing work toward its sense and purpose, and signaling pride about being one of its members, evaluating that the ingroup scores high on the Horizontal (vs Vertical) dimension is most important, as shown by the BRM (Ellemers et al., 2013; Ellemers & Haslam, 2011). Moreover, because global impression (i.e., disliking vs liking a social target) is more about strategic

and personal (vs accurate and consensual) evaluation, Horizontal (vs Vertical) evaluation better predicts (i.e., has priority in predicting) global impression of groups, other individuals (Goodwin et al., 2014; Kervyn, Fiske, & Yzerbyt, 2013; Pagliaro et al., 2013; Wojciszke & Abele, 2008), and even the self as seen by other individuals (i.e., the reputation of the self; Hauke & Abele, 2019, 2020a, 2020b).

And third, when the goal is to evaluate social targets efficiently (i.e., maximizing the *processing speed* of social evaluation), research by the DPM and other labs shows that the Horizontal dimension trumps the Vertical dimension (Abele & Wojciszke, 2014), not least because efficiency matters more in strategic and personal (vs accurate and consensual) evaluation of social targets (fittingly, there is a tradeoff between speed and accuracy in virtually all areas of human performance). For example, perceivers are quicker to recognize and categorize terms that denote Horizontal (vs Vertical) evaluation, and are faster at interpreting ambiguous behaviors as indicators of a high or low Horizontal (vs Vertical) score (Abele & Bruckmüller, 2011).

In sum, the Vertical dimension has priority over the Horizontal dimension when perceivers maximize the pragmatic diagnosticity of social evaluation, as claimed and supported by DCM, ABC model, and SCM research. In contrast, the Horizontal dimension has priority when perceivers maximize the subjective weight and processing speed of social evaluation, as claimed and supported by DPM, BRM, and SCM research. Interestingly, DCM considers that, once people have taken into account the Vertical dimension, evaluations on the Horizontal dimension serve strategic purposes. As for the SCM, the model argues that the two dimensions have priority for different reasons, the Vertical to determine *who* is important and requires attention, the Horizontal to determine *how* to interact with them.

Finally, we resolved the controversy about *relation* by specifying four goals. When the goal is to *comprehend* a relevant target, detail-oriented and bottom-up processing tend to result in a zero relation between Vertical and Horizontal evaluations, perhaps because perceivers attend to separate, independent clues to evaluate a target on the two dimension. DPM research shows, for example, that the relation between Vertical and Horizontal evaluations of the self is zero, and the same is true when the target is a close friend (Abele et al., 2016). Similarly, the BRM finds that the relation between Vertical and Horizontal evaluations of one's ingroup, another undoubtedly relevant target, tends to be zero (Leach et al., 2007).

If the goal is to *efficiently* evaluate a target, big-picture and top-down processing tend to result in a positive relation. Perceivers save a lot of time and energy simply by generalizing their liking for a target to evaluations of

the target as high on the Vertical and Horizontal dimension (i.e., a halo effect), by generalizing their disliking to low evaluations on both dimensions (i.e., a horn effect), or by generalizing a high (vs low) evaluation on one dimension to a high (vs low) evaluation on the other dimension. These efficient evaluation strategies all result in a positive relation between Vertical and Horizontal evaluations. It is plausible that perceivers use more efficient evaluation strategies when the target is less relevant, when the targets are many, or when there is little information about the target. Consistent with these assumptions, the DPM finds a positive relation between Vertical and Horizontal evaluations of a loose acquaintance (Abele & Wojciszke, 2014), and SCM research shows a positive relation in societies characterized by alliances and enmities (Durante et al., 2017). And more recent work shows that people who evaluate a target as high (low) on the Vertical dimension are surprised if that person unexpectedly shows behavior that indicates a low (high) score on the Vertical dimension. Conversely, people who evaluate a target as high (low) on the Horizontal dimension are surprised if that person unexpectedly shows behavior that indicates a low (high) score on the Vertical dimension (Brannon, Sacchi, & Gawronski, 2017).

Sometimes, the goal is to *maintain harmony* or foster collaboration between two targets that each need and want to be evaluated as superior on at least one distinct dimension. If bottom–up processing establishes that one of these two targets is superior on the Vertical dimension due to a large, stable, and legitimate target difference in Vertical clues, top–down processing compensates the other target with superiority on the Horizontal dimension, producing a negative relation. The DCM finds this negative relation when a perceiver evaluates their ingroup vis-à-vis a cooperative outgroup, two outgroups that cooperate (i.e., when the perceiver is an uninvolved observer), and for both experimental, minimal groups and real ones (Cambon et al., 2015; Cambon & Yzerbyt, 2016; Yzerbyt et al., 2005).

At other times, the perceiver's goal is to evaluate targets' *compatibility* with the self, which comes down to evaluating them on the Horizontal dimension that informs the self about social opportunities vs challenges, as mentioned above. If the targets are many and obviously vary on the Vertical dimension (e.g., when perceivers evaluate many societal groups; Koch, Imhoff, Dotsch, et al., 2020; Koch, Imhoff, Unkelbach, et al., 2020), absent better information perceivers tend to see greater opportunity in targets they see as Vertically more similar to the self. This top–down inference of Horizontal (compatibility) evaluations from relatively more bottom–up Vertical evaluations results in a positive, negative, or inverted u-shaped relation, depending on whether

the perceiver evaluates the self as high, low, or moderate on the Vertical dimension, respectively (Koch, Imhoff, Dotsch, et al., 2020, Koch, Imhoff, Unkelbach, et al., 2020). Finally, the goals (i.e., comprehension, efficiency, harmony, and compatibility) and processing modes (i.e., bottom-up and top-down) mentioned above can mix. Aiming to evaluate both efficiently and harmoniously (e.g., groups in unequal societies; Durante et al., 2013, 2017) mixes the resulting positive and negative relation into a net zero relation between Vertical and Horizontal evaluations, as shown by the SCM.

In sum, our contribution to the science of social evaluation is fourfold: We compared five models of social evaluation to clarify their unique aim and scope. Each model is valuable because it explains a unique context. We combined the paradigms of the models to generate new insights about social evaluation. We integrated the models in a framework that specifies goals, functions and processing modes to resolve their controversies about the content, priority, and relation of social evaluative dimensions. And we conveyed the agreed-on norms and planned behaviors that, in our case and view, were helpful for collaborating productively across seemingly conflicting models. In hopes that you—the reader—agree that our contribution is valuable, we encourage other multi-theory collaboration despite the difficulties we had to overcome. We are pleased to see that they are trending (Barrett, Adolphs, Marsella, Martinez, & Pollak, 2019; Cowan et al., 2020; Fiedler et al., 2019; Mehlhorn et al., 2015).

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