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## Spillover effects of sustainable consumption: combining identity process theory and theories of practice

Marcia Frezza<sup>a,b</sup> , Lorraine Whitmarsh<sup>c</sup> , Martina Schäfer<sup>a</sup>  and Ulf Schrader<sup>d</sup>

<sup>a</sup>Center for Technology and Society, Technische Universität Berlin, Berlin, Germany; <sup>b</sup>Laboratory of Human-Environmental Relations Studies, Postgraduate Program in Psychology, Universidade de Fortaleza, Fortaleza-CE, Brazil; <sup>c</sup>School of Psychology, Cardiff University, Cardiff, UK; <sup>d</sup>Division of Economic Education and Sustainable Consumption, Institute of Vocational Education and Work Studies, Technische Universität Berlin, Berlin, Germany

### ABSTRACT

Work organizations that implement sustainability strategies can create supportive environments for the performance of sustainable routines. For instance, employers have the capacity to influence sustainable lifestyles of their employees by increasing spillover effects from workplaces to home settings. These circumstances provide a potential pathway to change routinized activities in different domains. We critically review sociological and psychological literature on practices of environmental relevance to better understand these spillover effects. These disciplines have contributions to make but are on their own insufficient to determine trajectories toward more sustainable (consumption) routines. This analysis thus considers both structural and individual dimensions of sustainable lifestyles. To advance analyses of spillover of routinized activities, we present a framework that combines theories of practice concepts (meanings, competencies, and material aspects) and principles of identity process theory (continuity, distinctiveness, self-esteem, and self-efficacy). Our framework aims to identify and assess spillover effects from the workplace to domestic settings. We show that work organizations can systematically provide the elements necessary for the performance of sustainable practices. The framework underpins methodological instruments to explain spillover effects (of sustainable consumption), equally encompassing individual and structural aspects.

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### KEYWORDS

Cross-situational spillover; sustainable consumption; identity process theory; theories of practice; work and domestic routines

## Introduction

Numerous governmental and institutional reports (UNDP 2016; WCED 1987) and academic publications (e.g. Nash et al. 2017; Jaeger-Erben, Rückert-John and Schäfer 2015; Whitmarsh 2016; Schäfer and Jaeger-Erben 2012; Schrader and Thøgersen 2011) released in recent years have sought to encourage sustainable lifestyles. Achieving these changes demands profound and expansive measures (Nash et al. 2017; Thøgersen and Crompton 2009). Interventions that target isolated behaviors or technologies, for instance, are unlikely to be sufficient to provide alternative lifestyles toward sustainable societies. For instance, Thøgersen and Crompton (2009, p. 142) observe that measures will need to entail ‘far-reaching changes in individual behavior, fundamental changes in business practice, and the implementation of ambitious new policies and regulations to drive’ interventions. Several researchers assert that spillover effects, such as behavioral spillover, offer potential pathways to foster more sustainable lifestyles (Nash et al. 2017;

Muster 2011; Thøgersen and Crompton 2009). If the performance of one behavior affects the probability of practitioners to engage (positive spillover) or disengage (negative spillover) in a second behavior (Truelove et al. 2014), interventions to promote sustainability could take advantage of such mechanisms to increase the probability of promoting non-targeted sustainable behavior (Nilsson, Bergquist, and Schultz 2016). Another form of spillover occurs between contexts (cross-situational spillover) when the performance of a behavior in one context affects the probability of performing this behavior in a second context. Given the need to accelerate societal change to address sustainability challenges like climate change, policies and other interventions that favor spillover effects may offer ways to catalyze broad lifestyle changes more effectively and significantly.

Household consumption has a significant – and growing – impact on the environment, as well as on people’s living conditions (Eurostat 2017; Geiger, Fischer, and Schrader 2018). For instance, of the total volume of greenhouse-gas emissions released

in the United States in 2015 by sector, including distributed electricity, the following sectoral shares were domestic (16%), commercial (17%), and industrial (29%) (USEPA 2017). There is accordingly a compelling need to promote more sustainable lifestyles, consumption acts, and routines and with a clear demand for analyses of ‘how and why consumers behave as they do’ (Di Giulio et al. 2014, p. 45). Practically speaking, all social practices, classified as either production or consumption, entail the use of resources (Røpke 2009; Warde 2005). A distinct line between the two realms might not always be easy to establish because, for example, the transformation of resources into intermediate products, as well as the direct use (and discard) of final products occurs in both business and private domains (Røpke 2009). In this article, we define consumption as activities that involve the acquisition, use, and disposal of goods and services (Kaufmann-Hayoz et al. 2012; Schrader and Belz 2012).

Kastner and Matthies (2014, p. 178) highlight the need to have educated and motivated consumers who are able to look for new opportunities for pro-environmental behavior. They claim that for the design of policy measures, ‘not only impact relevant behaviors should be addressed but also general education for pro-environmental motivation and thus sustainable development.’ In this sense, we can perceive that work organizations that implement programs which foster sustainable routines during working hours (affecting shared meanings, competencies and structures) may contribute to this education and motivation.

Most studies of understanding and changing environmentally relevant actions use mainstream social-psychological approaches where the focus is on the individual level, implying that personal change is sufficient for social change (Batel et al. 2016). Theories and behavioral models could be enhanced by shifting attention from individual actions toward more expansive and contextual behavioral aspects (Nash et al. 2017) which would require consideration of the linkage among individuals, businesses, governments, and the cultural and physical contexts of consumption and lifestyles.

Among sociological perspectives, theories of practice (TPs) provide theoretical and methodological alternatives to supplement individualistic and reductionistic approaches (Nash et al. 2017; Nicolini 2012), presenting new ways of understanding human behavior (Reckwitz 2017) and consumption (Warde 2014), including behavioral spillover (Nash et al. 2017). But when explaining consumption practices, TPs equally have limitations and gaps, specifically concerning mind and bodily processes (Warde 2014) and the role of individuals. To shed light on

such blind spots, social-psychological theories that elucidate the role of individuals and mental processes can usefully be combined with TPs. In this article, we argue in particular that the identity process theory (IPT) can provide such a bridge to TPs in understanding sustainable consumption behavior change and spillover. IPT defines identity as a dynamic social process that has intrinsic relations to social changes and actions (Jaspal, Nerlich, and Cinnirella 2014; Breakwell 2010). The interdependence of identity construction and elements of practices can help explain how routines change and how spillover occurs. According to our extensive literature review, it is the first time the potential combination of TPs and IPT is proposed. Additionally, despite growing research interest in spillover effects, evidence and catalysts for behavioral spillover are still unclear (Nash et al. 2017).

The guiding question of this article is ‘how can the combination of identity process theory and theories of practice benefit analyses of spillover effects?’ As expressed by Klade et al. (2013, p. 322), ‘the workplace setting together with incentives provided by the company forms an ideal opportunity to organize daily practices and behavioral routines in a more sustainable and climate-friendly manner.’ Accordingly, the framework that we describe aims to observe and analyze spillover effects, primarily, from the workplace to the domestic environment. With this choice, we acknowledge that work organizations have the possibility to systematically structure and implement policies that shape the material and physical aspects of the workplace, the meanings and values shared by employees, as well as employees’ skills and competencies necessary for the performance of (sustainable) practices. For other actors, as municipalities, it is much more difficult to implement integrative strategies that comprise all practice elements (Süßbauer and Schäfer 2018). In future stages of this research, we plan to expand the use of the framework to study spillover effects from domestic settings to the workplace, and between other contexts and the domestic sphere.

In the second section, we provide an overview of studies on spillover effects, emphasizing their potential for opening innovative pathways toward sustainability. We then present in the third section core concepts of TPs and describe some of their blind spots. The fourth section describes our decision to include an identity theory in our framework and analyzes the advantages of using IPT. We then in the fifth section elaborate on why the proposed combination of TPs and IPT is relevant and discuss how we can assess spillover effects from workplaces to home-settings by applying our framework. In the final two sections, we outline the expected

contributions of this conceptual framework and summarize our key conclusions.

### **Spillover effect studies: the need for innovative pathways toward sustainability**

Various disciplines including psychology, economics, and sociology have examined spillover effects in human behavior and in relation to different domains (safety, environment, health, finances), although these effects have previously been characterized in diverse ways: ‘response generalization’ (Geller 2002; Ludwig and Geller 1997), ‘the foot in the door effect’ (Beaman et al. 1983; Freedman and Fraser 1966), and ‘moral licensing’ (Blanken, van de Ven, and Zeelenberg 2015; Mullen and Monin 2016). Spillover is the observable and causal effect that one behavior has on another (Nash et al. 2017; Dolan and Galizzi 2015) and it can be positive (resulting in consistent behavior change) or negative (resulting in inconsistent behavior change). Spillover studies either consider the probability that the performance of one behavior leads to the performance of a second behavior (behavioral spillover) or consider the probability that the performance of a behavior in one context leads to the performance of the same behavior in another context (cross-situational spillover) (Nash et al. 2017).

Research on spillover effects has to date mainly dealt with spillover within the same context and in particular has tended to focus on domestic settings (Thøgersen and Crompton 2009). To a lesser extent, investigations of spillover have also focused on professional or workplace contexts and these studies have typically been concerned with work-life balance or relationships with colleagues and family members (Cho et al. 2013; Sanz-Vergel and Rodríguez-Muñoz 2013; Tenbrunse et al. 1995) and environmentally friendly behaviors (Littleford, Ryley, and Firth 2014; Nik Ramli and Naja 2012; Muster and Schrader 2011). Boström et al. (2015) conducted comparative qualitative research in differently sized organizations of various sectors (hotels/conference venues, transport, cinema, interior design, and hospitals/daycare) and concluded that a general organizational sustainability/environmental focus, for instance including sustainability policies, strategies, manuals, and/or codes of conduct; can help to create a holistic view that extends to other areas (e.g. creation of ecolabels, technical and risk-related schemes, and procurement guidelines). Although some research shows little spillover between workplaces and home-settings (e.g. Littleford et al. 2014), other studies report that interventions implemented at workplaces enable positive spillover of consumption patterns to domestic domains (Nik Ramli and Naja 2012;

Muster 2011; Thøgersen and Ölander 2003; Thøgersen 1999) – even though the impact on private consumption was not a deliberate objective of the organizations (Muster 2011).

Our research suggests that identity is likely to be important for the occurrence of spillover effects. Similarly, when Dittmer and Blazejewski (2017) investigated spillovers of pro-environmental behavior (PEB) from private and public spheres to working spheres, they proposed that environmental identity is a key motivational basis for life-work spillover. Additionally, Kastner and Matthies (2014) argue that a pro-environmental motivational basis for PEB change is key to spillover processes, even though high-impact PEBs (i.e. actions that are most beneficial for the environment) are less often motivated by pro-environmental concern than low-impact actions. The authors argue that drawing on self-perception processes may help to achieve spillover of higher impact PEBs.

Besides self-identity, previous research has highlighted self-efficacy as relevant to promoting cross-situational spillover. Dittmer and Blazejewski (2017) found self-esteem and self-efficacy feelings could play a role in the establishment of PEB, which are key concepts that we explore in the proposition of our framework. Similarly, Littleford et al. (2014) compared two municipal government workplaces and found notable differences between them in adoption of energy-saving behaviors, due primarily to control factors (e.g. automated lighting) and material factors (i.e. using the same equipment at home and work) may also be a facilitator. They also found limited relationships between workplace and home energy-saving behaviors, although these relationships were stronger in one of the workplaces where there was more control over behavior. They concluded that ‘people behave more consistently across settings when they have greater control over their own behavior,’ including physical and social control (p. 165). Other work also suggests homework spillover may be possible if there is organizational or social support in both environments (Rashid and Mohammad 2011). Additional studies bring some indications of relationships between spillover and identity concepts; however, they did not directly investigate workplace settings and are mainly related to behavioral spillover (Nash et al. 2017; Thomas, Poortinga, and Sautkina 2016; Van der Werff, Steg, and Keizer 2014; Whitmarsh and O’Neill 2010; Thøgersen and Ölander 2006).

Nonetheless, beyond these limited findings, researchers have not explained satisfactorily the conditions and processes that underpin (or obstruct) cross-situational spillover effects (Nash et al. 2017); indeed, there remains ‘a lack of detailed



investigation into the mechanisms behind spillover effects' (Thomas et al. 2016, p. 127). Furthermore, spillover literature is methodologically limited, particularly relying on behavioral intentions and self-reports, rather than measuring actual behavior change.

Along with a need to foster lifestyle changes in a more holistic way to address sustainability challenges, it is also necessary to pursue integrative social science that seeks to develop more significant opportunities for reducing emissions at the individual and societal level (Capstick et al. 2014). Accordingly, scholars advocate that there are strong reasons to deepen comprehension of spillover of sustainable consumption, including from workplaces to private domains (Muster and Schrader 2011) by drawing on insights from a number of fields. Providing a more interdisciplinary perspective can help address some of the criticisms (including from among the psychological community) of traditional psychological studies on (sustainable) consumption and spillover effects (Piscicelli 2016; Hargreaves 2010; Jackson 2005). For example, Uzzell and R athzel (2009, p. 341) point out that psychology 'has largely developed individualistic and reductionist models of behavior which have rarely positioned behavior within its larger social, economic and political context'. Such models provide important insights on individuals' perceptions, cognition, and intentions, but also tend to overlook contextual and non-conscious drivers of behavior (Piscicelli 2016; Hargreaves 2010; Jackson 2005). This perspective impedes a thorough understanding of the challenges of promoting more sustainable routines. Scholars from theories of practice (TPs) advocate that studies of consumption should not focus on specific behaviors, but rather on practices. Practices are important for sustainability because through their daily

activities (e.g. cooking and showering) people constantly consume resources (Spurling et al. 2013).

Despite epistemological differences, theorists of both TPs and social psychology have attempted to bring together these streams where there are areas of convergence, such as around behavior change (Batel et al. 2016), spillover (Nash et al. 2017), and habits (Kurz et al. 2015). They assert that such combination could be fruitful for studies and interventions to promote sustainable lifestyles (e.g. Capstick et al. 2014; Boldero and Binder 2013; Darnton and Evans 2013; Heisserer 2013; Darnton et al. 2011; Whitmarsh, O'Neill, and Lorenzoni 2011; Wilson and Chatterton 2011). We agree that 'changing the core unit of analysis and focus, a social practice-based understanding of spillover can both challenge and enrich psychologically dominated perspectives..., [providing insights on] why some actions co-occur and not others' (Nash et al. 2017, p. 13). Building on these efforts, we here consider that cross-situational spillover may be another area of convergence for TPs and social psychology, specifically identity process theory (IPT) that has the potential to generate insights on transformation of sustainable consumption routines (Figure 1).

### Theories of practice

Theories of practice (TPs) shift the focus from human behavior to social practices. A social practice can be defined as 'a routinized type of behavior which consists of several elements, interconnected to one other... bodily activities, ... mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge... a "block" whose existence necessarily depends on the existence and specific interconnectedness of these elements,

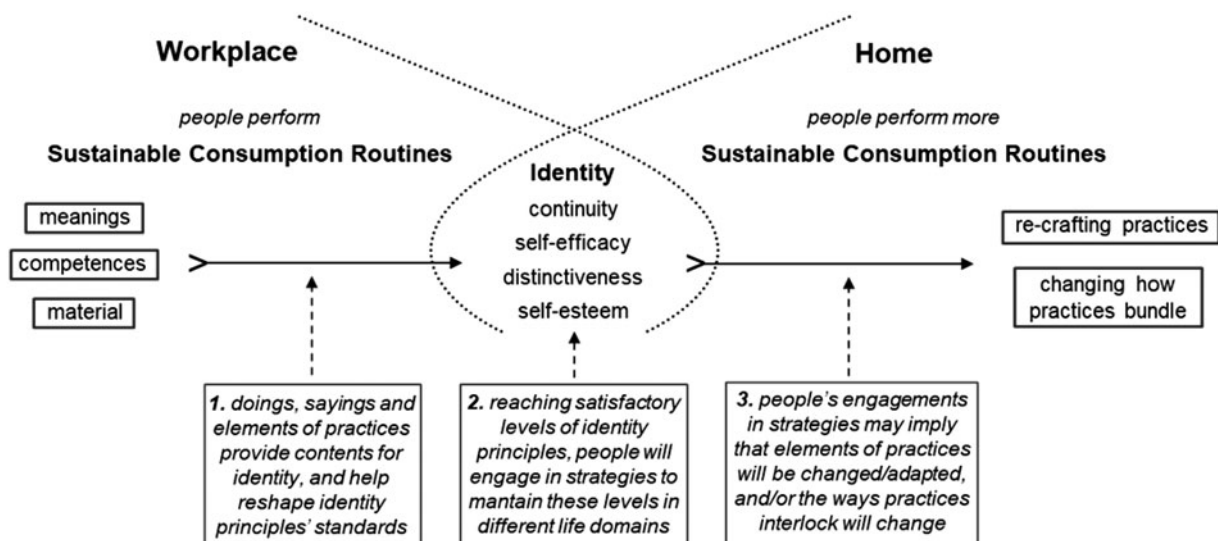


Figure 1. Framework to examine cross-situational spillover (combining identity process theory and theories of practice).

and which cannot be reduced to any one of these single elements' (Reckwitz 2002, pp. 249–250).

Similarly, Darnton and Evans (2013) describe social practices as patterns of actions, which bring together 'doings and sayings' – in particular times and spaces (see also Nicolini 2012). These 'doings and sayings' are socially shared in routinized ways. There are common features that enable practices to be coherent, regular, and recognizable in everyday life (Darnton and Evans 2013). The elements that constitute practices are frequently divided into three groups: materials (e.g. objects, technologies, infrastructure, and the body itself), meanings (e.g. ideas, emotions, aspirations, expectations, and symbolic meanings) and competencies (e.g. skills, know-how, techniques, and knowledge) (Shove, Pantzar, and Watson 2012; Reckwitz 2002).

In TPs, individuals are characterized as practitioners or carriers of practices. Depending on the theoretical tradition, there might be differences concerning the practitioner role or specific characteristics. But, generally, TPs define practitioners as knowledgeable and competent carriers who link the elements of the practice (meaning, material, and competence) (Maréchal and Holzemer 2015; Røpke 2009). Shove (2012) emphasizes that rather than acquiring habitual practices, practitioners are acquired or recruited by practices. Thus, TPs take social practices as the central focus of interest, moving individuals to the background (Darnton and Evans 2013).

However, TPs are far from being a unified theoretical body of knowledge. Nicolini (2012, p. 1) emphasizes that TPs can only be perceived as 'a rather broad family of theoretical approaches connected by a web of historical and conceptual similarities.' Since practice is a complex, multifaceted, and multi-dimensional phenomenon, the author observes that it cannot be grasped by using a single totalizing discourse; instead, practice should be addressed through sets of methodological procedures (that he terms a 'toolkit approach'). Based on this logic, for instance, Nicolini (2009) designed one of these sets to carry out practice-based organizational studies. He used heterogenous sensitizing concepts extracted from different TP traditions.

### **Blind spots in theories of practice**

TPs seem, however, to have difficulty in answering some key questions. From the perspective of TPs, Shove (2012, p. 100) raises important queries, for instance, 'How do habits locate suitable carriers? How do habits, viewed as practices that require recurrent, consistent reproduction, relate to other less demanding pursuits?' Although TPs shed light

on why certain consumption routines develop and become stable, they have thus far delivered little explanation for why some practitioners are recruited by certain practices and others are not. Gram-Hanssen (2015, p. 9) observes that 'there is a lack of studies on the social differentiation of practices: why there are variations within the performance of practices, focusing either on the social structuration within the performance of practices or on how individuals in different socio-materialities or time-spaces perform practices differently'.

The understanding that individuals are merely carriers of practices (Shove 2012; Shove et al. 2012), a very frequent concept in practice-based studies on sustainable consumption, might contribute to the mentioned difficulties. This assumption limits the understanding of practice performances because it puts very low emphasis on the role of the individuals who perform or change practices. Whitmarsh, O'Neill, and Lorenzoni (2011, p. 259) observe that concerning transformational and transitional processes, the active participation of people should be considered. The authors claim that, 'unfortunately, there is no "I" (for Individuals) in the... model Shove advocates.' Warde (2014, p. 294) also analyzes some of the limits that TPs face to explain the relationships among action, body processes, things, and mind. He observes that 'while acknowledging the neglect of material factors during the cultural turn, maybe the stick is now being bent too far in the opposite direction.' Additionally, Gram-Hanssen (2015, p. 9) highlights that the 'need to distance practice theory research from an individualistic approach has also led to too much fear of studying (1) how the performances of practices vary between practitioners and (2) how individuals perform practices across particular socio-material settings, including how individuals also take part in shaping structures'.

We thus conclude that considering contextual and non-human elements is essential, but it is also imperative to regard individuals' roles as an integral part of practices, even if they are, inevitably, embedded in institutional and physical constraints. In this sense, the application of a theory of identity can be particularly fruitful to help explain phenomena such as those raised by Gram-Hanssen (2015) and thus significantly contribute to practice-based studies on sustainable consumption.

### **Identity process theory**

The use of an identity theory to explain motives for and resistance to behavioral change adds potential new pathways to favor sustainable behavior. Murtagh, Gatersleben, and Uzzell's (2012, p. 318)

results ‘suggest rich avenues for future research on the theoretical and empirical implications of the relationship between identities and sustainable behaviors.’ Theories of identity have been proposed to understand the (non-)adoption of PEBs (e.g. Jugert et al. 2016; Jaspal, Nerlich, and Cinnirella 2014; Uzzell and Rätzl 2009; Lave and Wenger 2005; Terry, Hogg, and White 1999). Some studies, more specifically, have sought to explain the mechanisms of how spillover works via identity (Nash et al. 2017; Thomas et al. 2016; Van der Werff, Steg, and Keizer 2014; Whitmarsh and O’Neill 2010; Thøgersen and Ölander 2006). Despite the promising findings achieved by the recent attempts to apply theories of identity to comprehend behavioral change mechanisms toward more sustainable behaviors (via spillover or not), little attention has been paid to the analysis of how interdependency between identity construction and structural aspects can elucidate cross-situational (as opposed to behavioral) spillover. Here we consider that a combined approach of these two study domains can provide a step forward for the understanding of cross-situational spillover.

For the development of our framework, we first considered four theories related to identity: social identity theory (SIT), identity theory (IT), social representations theory (SRT), and identity process theory (IPT). We briefly review the first three of these theories before demonstrating that IPT provides better conceptual basis for the targeted endeavor. The concept that social structure precedes the individual and that identity has impacts on people’s behaviors are in accordance with all four theories, but each theory focuses on different aspects of identity. SIT seeks to explain interpersonal and intergroup dynamics, focusing on individual needs and motivations (Breakwell 1993). For SIT, the base for identity formation is self-categorization and the individual’s perceptions derived from (inter/out) group relations (Stets and Burke 2000). In IT, roles (e.g. parent, worker) are the basis of identity. According to this theory, society provides roles, which are sets of expectations of behaviors considered appropriate (Hogg, Terry, and White 1995). Self-evaluating the appropriate role-identity, an individual will act to fulfill the expectations and meanings attributed to the role (Stets and Burke 2000). SRT considers that interpersonal communication processes determine the content and structure of people’s belief systems, which are called social representations. This theory explains that it is through social representations that people interpret and give meaning to the world (Breakwell 1993). None of these three theories, however, focusses on identity behavior-change processes or adequately accounts

for how behavioral consistency across contexts (e.g. home and work) may be mediated by (change in) identity. On the contrary, there is more attention given to how identities and behavior may differ across, for example, home and workplace due to different roles, social groups, or representations associated with each context.

Although, initially, Breakwell (1986) developed IPT to explain how individuals respond to threats to identities, the author emphasizes that IPT provides a general theory of identity processes (Breakwell 2014). Coyle and Murtagh (2014) observe that there is a wide range of possibilities to extend the use of IPT, encompassing proactive and constructive identity motivations. Threats to identity are not relevant for this article, but IPT’s comprehension of identity (its structure, contents, and construction process) is key to understanding the interdependence of social changes and actions, as well as to apprehending the significance of spillover effects. IPT is a holistic theory that avoids the separation of personal and social identities and the concept of multiple identities (Breakwell 2014). According to this theory (Breakwell 1986), identity is a dynamic social product of the interaction between the individual (considering her/his characteristics and capacities for developing memory, consciousness, and organized construals) and the social context (physical and societal structures and influential processes). This aspect of IPT is of great significance to our research. In addition to considering the role of mental activities (e.g. perceptions, interpretations and beliefs) – as the other three theories do – IPT stresses the importance of physical and social structures to identity construction and to the ways people act. Accordingly, comparing the four theories of identity, we conclude that IPT has more to offer for the understanding of (and changes in) routinized performances and spillover phenomena.

Angouri (2016) observes that, methodologically, identity can either be understood as something individuals have or something individuals do. IPT highlights that social changes affect identity construction; identity construction affects people’s actions; and, simultaneously, actions (re)shape identity (Breakwell 1993). While acting and being part of sociohistoric settings, individuals assimilate the content of identity, which defines the salience of identity’s characteristics (Breakwell 1986). Thus, identity is not a static entity. Additionally, an individual’s identity and ways of performing actions are necessarily interdependent. Identity’s structure and contents are continuously adjusted and evaluated depending on interactions with the social environment and ongoing social changes (Sablonnière and Osborne 2014).

Identity construction is regulated by two internal processes: ‘assimilation-accommodation’ refers to both the absorption of new elements into identity and the adjustment that occurs in identity structure to make space for new elements and ‘evaluation’ refers to the incorporation of value to identity elements (Breakwell 2010). These processes are guided by at least four principles, which can be described as desirable states for identity (Breakwell 1993):

- Continuity: The individual will seek (and act accordingly) to maintain feelings of self-continuity and/or group-continuity across time and space.
- Distinctiveness: The individual will seek (and act accordingly) to emphasize feelings of uniqueness and differentiation from others (individuals and/or groups).
- Self-esteem: The individual will seek (and act accordingly) to achieve and maintain feelings of personal and/or group worth.
- Self-efficacy: The individual will seek (and act accordingly) to achieve and maintain an identity structure which is characterized by competence and control over life and situations.

Embedded in social contexts, individuals proceed with the assimilation-accommodation and evaluation processes. If unable to fulfill their desirable states of continuity, distinctiveness, self-esteem, and/or self-efficacy, they will engage in strategies for coping with the undesirable state(s). Coping strategies include any activities, either thoughts or actions, aimed at modifying the state(s). They can function at three levels: intrapsychic, interpersonal, or intergroup (Jaspal 2014). In particular, the interpersonal and intergroup levels are relevant to our study because they can produce social mobilization, which can favor actual changes of practices and, possibly, spillover effects.

An important difference between IPT and the other theories of identity is the fact that it emphasizes the relevance of the process of identity construction, not necessarily stressing the individual’s need to be perceived as having a specific identity label. In relation to this distinction, and considering what Angouri (2016) highlighted, the definition of identity in IPT would be closer to what people do rather to what they have. In other words, this theoretical perspective explains how social contexts, as well as changes related to physical and societal structures and influential processes, affect the contents and structure of identity. This effect on identity occurs through pursuit of the fulfillment of identity principles. Such a process results in thoughts and actions that we could also discern as

‘doings and sayings.’ This understanding provides missing methodological tools that can enhance the comprehension of social practice changes and spillover effects (or how individuals perform practices across different social-material settings and particularly how they take part in (re)shaping practices).

### **Framework to analyze spillover effects: combining identity process theory and theories of practice**

#### ***Why is the combination of IPT and TPs relevant?***

To analyze routines and to intervene toward more sustainable consumption, it is necessary to consider aspects of both social-material structure and the role of individuals. As has been discussed, psychological approaches tend to focus more on individual decision-making processes than on conditions of daily routines, which limits understandings and possibilities to intervene. TPs also may constrain understanding of consumption behavior by putting low emphasis on the role of individuals. The combination of IPT and TPs is proposed to overcome such limitations.

IPT and TPs agree that awareness is a poor ground for pro-environmental actions (Thøgersen and Crompton 2009); that habitual behavior and routines are not consciously driven, as they are not a result of rational decision-making processes; and that the performance of action is made possible by social-technical (structural, temporal and spatial) elements (Boldero and Binder 2013; Binder and Boldero 2012; Whitmarsh, O’Neill, and Lorenzoni 2011; Jackson 2005). Another aspect that makes the combination suitable is that both IPT and TPs seek to describe the constitutive aspects, dynamics, and embedded sociohistorical configuration of their research foci. Despite the fact that the core aim of both approaches is not behavioral change, in different ways, IPT and TPs relate to changes in social-historic settings that will co-occur with changes in habits and routines. This perspective is key to our framework.

A practice-based study or intervention seeks to identify the available materials, meanings, and competencies that allow particular practices to recruit carriers (Kurz et al. 2015). Such mapping of these elements provides a clearer description of the structure and dynamics of social changes that affect identity construction. However, the notion that individuals (or carriers) are captured (or recruited) by practices is not enough to explain why practices are carried out differently by various individuals.

Thus, to better explain the trajectories of practices, and how they are stabilized, adapted, or



abandoned it is also necessary to better explain, as Warde (2014) puts it, individuals' relevance and the relationships among action, body processes, things, and mind. Additionally, when Reckwitz (2002) defined social practices, he included mental activities as one of the constitutive elements. Nash et al. (2017) also describe the significance of TPs to social-psychological studies on spillover. Accordingly, we propose the combination of TPs and IPT to design practice-based studies of spillover effects.

### ***How can we examine spillover effects based on the combination of IPT and TPs?***

One could argue that TPs do not conceptualize spillover, but that they convey understandings that can be considered proximate to spillover effects. Schatzki (2015) affirms that practices and their arrangements bundle through time and space. If practices form bundles, they are connected, despite being performed in different time and/or spaces. Consequently, a practice or its elements may affect other practices and their elements, meaning that they may prefigure practices and configurations of the elements. Accordingly, Nash et al. (2017) observe that there is a 'loose concept of spillover' in TPs, because, for example, across different (spatial-temporal) contexts, practitioners engage in the same practice and, therefore, follow structural rules and procedures that prefigure similar performances of the practice. Røpke (2009, p. 2493) observes that social reproduction 'is based on the intersection in time and space of institutional projects and individual pathways, sometimes with individuals linked to specific roles within institutions (e.g. within the family or at a workplace).' Additionally, according to Reckwitz (2002), individuals represent a unique crossing point of practices.

Hence, we can see in Schatzki (2015), Røpke (2009) and Reckwitz (2002) the implicit importance of individuals for the realization and understanding of practice trajectories. However, as discussed before, TPs do not satisfactorily explain how individuals perform across different social-material settings, or how they actively contribute to (re)shape practices (Gram-Hanssen 2015). Based on our current literature review, only one published study (Wonneck and Hobson 2017) has applied a practice-based approach to investigate spillover effects, but unlike our work, the authors did not consider the active role of practitioners.

We present some contributions that IPT provides for the comprehension of practice trajectories – or spillover effects. First, we observe that the concept of 'role' – mentioned in Røpke (2009) and the key

to some identity theories – favors an understanding about why some practices may *not* be reproduced in intersections in space or time. Role identities imply the fulfillment of expectations and appropriate behaviors prescribed by specific groups and contexts (Stets and Burke 2000; Hogg et al. 1995). Hence, according to role-identity theories, when the individual crosses different places and/or contexts, s/he will tend to give salience to the specific role expected for that setting. For example, the roles of being a manager at a company and a mother at home imply different practices and/or different ways of performing the same practices. Thus, the focus on 'roles' could explain the 'non-reproduction' of practices across social-material settings – and the non-occurrence of spillover effects.

In contrast, the processual concept of identity in IPT is suitable to explain the trajectories of practices across different settings (spillover). For instance, at work, an employee is engaged in practices that consume water more sustainably. The performance of such routines (being embedded in the available meanings, material, and competencies at work) affect the contents of her/his identity – for example, s/he may develop feelings of high self-efficacy and self-esteem because s/he performs practices that entail sustainable consumption of water. These feelings will add content to her/his identity, which will guide the way s/he will act and interact with different social-material elements. Additionally, as the carrier who crosses practices in the intersection of time and space, s/he may seek to maintain, in other settings – for instance at home – the high levels of self-esteem and self-efficacy reached at work (and this may also imply the need for continuity). Accordingly, s/he will seek to engage in strategies (at home) to maintain these high (and satisfactory) levels of the identity principles. While proceeding with such engagements (and performing different practices), s/he will potentially be confronted with (and possibly adapt) the available elements of practices at home (material, meanings, and competencies), as well as to negotiate with the other involved practitioners. In this sense, we may identify that the arrangements of practices at work can potentially prefigure similar practices at home: while practice arrangements affect the contents of identity, the effort to maintain the level of identity principles affects the way people act/perform, which can contribute to reshaping practices (via modifying their elements or the way practices bundle together). However, the comprehension of practices refiguration (or the spillover effects) between different settings (e.g. work and home) will be impaired if the participation of the individual (the unique crossing point between practices) is neither considered nor

understood. Figure 1 is designed to visually express these processes, or, more specifically, the interactions and interdependencies among elements of practices and identity principles that affect practices.

### Describing the framework

Figure 1 depicts our view of processes involved in spillover occurrences, combining IPT and TPs concepts. We perceive spillover effects as part of multi-dimensional processes that entail the dynamics of how practices are perpetuated, abandoned, and/or adapted, in combination with the intrinsic and continuous strategies of practitioners to fulfill identity principles.

Essentially, spillover effects take place in both directions, between different places and life domains. Therefore, they occur, for instance, from home to the workplace, as well as vice versa (Young et al. 2015; Tudor, Barr, and Gilg 2008). However, the focus of our current research is the study of spillover effects from the workplace to the home domain. Correspondingly, in Figure 1, the arrows point in this direction.

Two life domains are represented in Figure 1: work (on the left) and home (on the right). In each domain, a variety of practices are performed. Accordingly, these practices are shaped by the available elements (competencies, material, and meanings). The framework suggests that if at work people perform practices that entail sustainable consumption, this can potentially affect the way they perform practices at home. While people perform practices at work: they deal with instruments and objects; they develop competencies and know-how; they reproduce meanings; they negotiate with other practitioners; they conform or resist to norms; and so forth. In this sense, the specific conditions of practice performances and configuration at work will provide elements for identity. The social-material settings, the doings and the sayings, will help define the salience of the characteristics of identity and will help establish the standards for identity principles. The processes that are described here are represented by boxes No. 1 and No. 2 in Figure 1.

The work domain in the figure represents a work organization that creates supportive environments for employees (practitioners) to perform sustainable routines. Hence, it is expected that, in general, employees will develop high levels of identity principles (self-efficacy, continuity, self-esteem, and distinctiveness) concerning practices that involve sustainable consumption. Since the process of identity construction compels people to strive to maintain the same level of identity principles across time

and space, it implies that employees will engage in strategies to succeed in achieving satisfactory levels in different life domains (box No. 2 in Figure 1).

However, people's actions are embedded in social-material conditions and elements of practices. Hence, the strategies they engage in will be dependent on the conditions and elements available in the different settings they come across. Concerning our framework (box No. 3 in Figure 1), it means that when people seek to maintain the satisfactory levels of identity principles (made possible via routines at work), their actions and performances at home will be circumscribed by the conditions and elements available in this setting. Accordingly, their strategies might entail negotiations, resistances, conflicts, adaptations, and changes concerning the elements of the practices, as well as concerning the ways practices bundle together. On one hand, these processes will possibly favor changes of practice performances at home, where agency and control are likely to be greater than in the workplace (Littleford et al. 2014). On the other hand, while pursuing strategies and potential negotiations to adapt and change practices at home, employees engaged in spillover processes may have to deal with resistances and conflicts from other household members who might not have the same pro-environmental motivations or object to disruption to their routines (e.g. Hargreaves, Nye, and Burgess 2010). Dittmer and Blazjewski (2017) observed that people respond in different ways when facing resistance, for instance, by becoming resilient and/or tolerant of frustration or by enhancing their self-esteem. Particularly the last strategy may fortify their determination to perform (and spillover) the practice. To investigate and analyze the changes that we highlight above, we refer to Spurling et al. (2013). The authors describe six ways in which sustainability challenges can be framed: three in current policy interventions (innovating technology, shifting consumer choices, changing behavior) and three from a practice perspective (re-crafting practices, substituting practices, changing how practices interlock). The latter group is of particular interest to our framework because of its linkage to social practices:

- Recrafting practices involve the reduction of resource intensity of existing practices by changing components or elements, for example, the implementation of LED lights or the adaptation/employment of competencies.
- Substituting practices involves replacing less sustainable practices with more sustainable alternatives, for example, substitute car driving by riding a bicycle.

- Changing how practices interlock involves adapting the way different practices bundle together. It is expected that adjustments can affect several interconnected practices, for example, washing clothes (reduction of water consumption), shopping (reduction/substitution of washing products), and cleaning the house (reuse of waste water to clean the patio floor).

Because we sought to advance analysis of the spillover of routinized activities from work to domestic settings, we deemed that investigation of the substitution of practices was beyond the scope of our aim. For this reason, we only focused in our framework on recrafting practices and changing how practices interlock (Spurling et al. 2013).

### **Brief illustration of conceptual improvements provided by the framework to spillover studies**

Using a practice-based approach, Wonneck and Hobson (2017) carried out an empirical study (linked to an intervention program) on the spillover of practices. The authors sought to understand whether and how certain practices affect each other, analyzing practice composition and relations to other practices. In addition to practical aspects related to materials, competencies, and meanings involved in spillover effects (negative and positive), they verified the occurrence of ‘emotive processes.’ By mentioning these ‘emotive processes,’ the authors state their relevance for the spillover phenomena to occur, but they do not explore how these processes would work, leaving important questions unanswered, for instance:

- How relevant are these emotive processes for the performance of practices?
- How and to what extent are the ‘emotive processes’ operators of spillover effects?
- How are these processes and the elements of practices linked?

We suggest that the use of our framework could help answer these questions as well as similar ones. We propose that the framework combining IPT and TPs can potentially deepen the comprehension of spillover of (sustainable) social practices. To better explain and exemplify our considerations on this matter, we elaborate in Table 1 how our framework could favor improved understandings of spillover effects of social practices.<sup>1</sup>

The additional brief analyses of some of Wonneck and Hobson’s (2017) results that we developed (third column of Table 1) highlight that the identity principles (feelings of self-efficacy, self-

esteem, continuity, and distinctiveness) influence the probability that spillover effects of practices will (not) occur. For example, in row ‘ii’ of Table 1, despite the fact that previously there was the availability of competence and material for the ‘practice of composting,’ the overall changes of elements of practices seem to have affected feelings related to self-efficacy and self-esteem, which were possibly determinant for the partial abandonment of the practice. We may conclude that TPs alone lack capacity to explain essential aspects of the cross-situational spillover of practices. To make significant progress on spillover studies, it is also relevant to consider the identity principles that guide identity construction. These considerations strengthen our argument that the combination of IPT and TPs is fruitful to deepen comprehension of reproduction, adaptation, and/or abandonment of social practices at the intersections of time and space. Thus, interventions that seek to favor the spillover of sustainable practices also need to take into consideration the interrelation of identity principles and (changes of) the elements of practices.

### **Expected major achievements of the framework**

Sustainability is a multilayered issue and to pursue solutions to environmental problems it is necessary to consider levels of both social structures and individual actions (Whitmarsh, O’Neill, and Lorenzoni 2011). The two dimensions are necessary, but neither one is sufficient on its own to determine pathways toward more sustainable consumption routines. Additionally, sustainable consumption studies need to conceptualize the relationships among individual aspects, elements of practice, and structural contexts (Capstick et al. 2014). It is, therefore, necessary to seek synergies between theoretical concepts, an effort that we strive to make here by combining concepts of IPT and TPs.

The specific combination of IPT and TPs that we have developed is in accordance with previous work that has pointed out the benefits of combining TPs and psychology, as well as concerning the understanding of spillover phenomena (e.g. Nash et al. 2017). In the current case, though, we have applied these two fields to cross-situational spillover, a particular form of spillover that has received far less attention than behavioral spillover. Our purpose is neither to integrate both streams nor to develop a unified theory but to find synergies between IPT and TPs, without risking their coherence, consistency, and independence. In that sense, in the previous sections, we accomplished our intention to explain the relationships among the elements of

**Table 1.** Insights of how the use of identity process theory can deepen analyses of spillover effects of social practices.

Some aspects of Wonneck and Hobson (2017) results using TPs		Contributions of our framework combining TPs and IPT to deepen the analysis The relevance of identity principles for spillover effects of social practices
Spillover effects	Practitioners' explanations	
i. As an effect of the intervention, practitioners reported they dry recycle more, both at home and elsewhere.	<p>a) After getting used to separating food and yard waste, practitioners 'felt it was weird' to see dry recyclables in the garbage bin.</p> <p>b) The intervention program 'forced' practitioners to reflect and develop techniques for separating the waste.</p>	<p>This result may indicate the relevance of practitioners' desires for continuity. We assume that practitioners were seeking to maintain feelings of self-continuity, which could have favored the occurrence of spillover effects of practices.</p> <p>This example may express the importance of feelings of self-efficacy for the occurrence of spillover. Affected by competencies of practices installed by the intervention, practitioners might have developed feelings of self-efficacy and sought to maintain control over other situations (reshaping practices and their elements).</p>
ii. The intervention program involved the collection of composting waste delivered to an industrial-scale composting facility. With this intervention, some practitioners reported they significantly reduced or stopped home composting.	<p>c) Related to home composting, some practitioners claimed they were not skilled at making good soil; they also found it difficult to keep pests away.</p> <p>d) Some practitioners had the feeling that home composting was 'pointless'.</p>	<p>It seems that practitioners felt a lack of self-efficacy. Possibly the competencies available within social practices were unable to deliver a desirable level of feeling competent. This understanding might express how important it is, for spillover to occur, that practitioners feel able to maintain a satisfactory level of self-efficacy, which may also be relevant for practices to recruit carriers and to stabilize.</p> <p>Since waste would be composted in any way by the program, it might have favored the perception that home composting is 'pointless'. In that sense, practitioners that used to home compost might have felt that they did not make a difference anymore in terms of sustainability impacts, which might have favored feelings of lack of distinctiveness. And this lack of distinctiveness contributed to changes in ways of dealing with waste. Additionally, feelings of doing something 'pointless' can be linked to feelings of low self-esteem as well as low self-efficacy. Without being able to maintain satisfactory levels of self-esteem, self-efficacy, and distinctiveness, practitioners performed in ways that contributed to the abandonment of the practice. In that sense, the practice was unable to continue recruiting the same/new carriers.</p>

practices, actions, identity principles, and spillover effects.

Work organizations have the possibility of shaping material structures, meanings, norms, and competencies of practices at worksites, which can create supportive environments for practitioners to perform sustainable routines (Süßbauer and Schäfer 2018; Boström et al. 2015). Additionally, previous studies have identified positive spillover effects between work and home domains. Therefore, it is desirable to develop studies and interventions that increase the potential of organizations to affect individual consumption routines at workplaces and in private spheres (e.g. favoring positive spillover of sustainable consumption practices). We contend that the combination of IPT and TPs applied to studies of cross-situational spillover of sustainable practices – the framework we present here – can contribute to such endeavors.

By developing this conceptual framework we have sought to generate new insights into analyses of spillover effects of sustainable routines – for example, the spillover of practices that entail consumption (of products, infrastructures, and services) and its different stages (acquisition, purchase, use, and disposal) between workplaces and home settings. In addition, we suggested how the framework can be analytically applied to empirical studies that

focus on spillover effects of sustainable consumption routines. As such, the framework addresses gaps and challenges mentioned in the literature, such as the need, highlighted for instance by Jaspal, Nerlich, and Cinnirella (2014) to develop empirical studies that seek to examine the interrelations between social practices and identity processes in contexts that aim at transitions to more sustainable lifestyles.

The framework focuses on spillover effects and changes of practices toward more sustainable consumption routines and the aspects that favor such phenomena, including, for example, material elements and individuals' relevance. Accordingly, the framework speaks to another gap mentioned in the literature, namely the need to explain how individuals perform practices across different social-material settings and how they take part in (re)shaping structures (Gram-Hanssen 2015).

Focusing on both the elements of practice and identity principles, the use of our framework encourages researchers to use forms of observing and interacting with the research object. The framework facilitates the use of several methodological tools and techniques – participant observations, different types of interviews, questionnaires, and comparison of different sources of data (diaries, field notes, audio, and video recordings). Such application of the framework contributes to improved



methodological strategies, offering, for example, further possibilities of triangulation, thus strengthening the results of the research.

## Conclusion

Our conceptual discussion results from a critical review of sociological and psychological literature on practices that are relevant with respect to environmental and sustainability policies. The analysis reveals that the combination of IPT and TPs is coherent, and it can potentially contribute to new insights in empirical studies on spillover effects of sustainable consumption routines. Additionally, our review is the first time that the combination of IPT and TPs has been proposed. Inspired by Nicolini's (2009) warning that, social practices cannot be understood using a single totalizing discourse, we sought to develop an interdisciplinary approach. With such an endeavor, we have sought to address some weaknesses of previous studies, such as the focus on individualistic attitudes and perceptions, lack of material dimensions, underestimation and/or overestimation of people's agency, and dichotomous perspectives. We deem that the framework can contribute to studies that seek to provide more comprehensive answers to questions about how practices capture suitable practitioners, how performances of practices vary among spatial-temporal settings and/or among practitioners, and how practices relate to other practices.

Additionally, we hope the concepts that we advance here will contribute toward development of clearer methodological instruments aimed at explaining spillover effects, equally encompassing individual and structural aspects. By not focusing on one behavior at a time, the framework favors the analysis of far-reaching changes in lifestyles. Seeking to assess the benefits of this approach, we have provided an initial test of the framework in relation to *post-hoc* analysis of an empirical study. Future work should seek to apply the framework at the outset of a spillover study, designing both a spillover intervention and its evaluation with these two theoretical strands and associated methodologies in mind. In addition to providing sensitizing categories for understanding mechanisms that favor (or obstruct) spillover phenomena, the framework can also be applied in future studies on spillover effects in a broader sense, for instance, between different life domains and/or different practices. It can also contribute to studies aimed at providing further explanations of identity construction (and the changes/threats imposed to identity) and on trajectories of practices. More broadly, we anticipate that the framework could be used as a theoretical and

methodological tool for designing studies and interventions with wide and diverse foci, aims, and applications.

## Note

1. We emphasize that the ideas presented in Table 1 are preliminary suggestions. For a more consistent analysis, access to primary data and additional empirical analyses would be necessary. Our intention is to demonstrate how the combination of TPs and IPT can provide a deeper and broader understanding of spillover occurrences, drawing on some results reported by Wonneck and Hobson (2017).

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## ORCID

Marcia Frezza  <http://orcid.org/0000-0003-2880-381X>

Lorraine Whitmarsh  <http://orcid.org/0000-0002-9054-1040>

Martina Schäfer  <http://orcid.org/0000-0003-2240-6928>

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