Human behavior and judgment: A critical nano-foundation for the Uppsala model and international business studies

Jan-Erik Vahlne and Roger Schweizer

Abstract

Economists and researchers of decision-making and business behavior increasingly rely on findings from the field of economic psychology. We argue that, by following a similar route, knowledge of firms’ internationalization is considerably enriched. The aim of this commentary is to point to the potential of including insights from research on human cognition and judgment in explaining internationalization behavior. We offer some examples relying upon commitments and knowledge development as outlined in the Uppsala model and thereby propose a conceptualization linking the nano- and micro-levels within the model.

Keywords: human cognitive and judgment characteristics; internationalization; Uppsala model; nano- and micro-levels

INTRODUCTION

A remaining and recurrent criticism raised against micro- or firm-level models in the field of international business (IB), such as the Uppsala internationalization process model (henceforth, Uppsala model⁴), is the lack of adequate inclusion of the individual’s role as a core nano-foundation⁵ in explanations of internationalization (e.g., Coviello, Kano, & Liesch, 2017; Foss, 2011; Kano & Verbeke, 2015; Treviño & Doh, 2020; Vahlne & Bhatti, 2019; Vahlne & Johanson, 2020; Verbeke & Kano, 2015). Indeed, despite Aharoni’s (1966) early call and empirical evidence (e.g., Calof & Beamish, 1995; Child, Ng, & Wong, 2002) highlighting the importance of considering managers’ cognitive processes and biases, research on firms’ internationalization processes has hitherto ignored human behavior in explaining internationalization decisions (Maitland & Sammartino, 2015). We use the term human behavior to refer to the potential and expressed capacity (mental, physical, and social) of human individuals to respond to internal and external stimuli (Kagan, Bornstein, & Lerner, 2020).
The purpose of this commentary is to advance the above-outlined quest to include human behavior in explaining a firm’s internationalization process. Highlighting the importance of cognitive, emotional, and social triggers as well as biases that affect managers’ behavior and judgment in the Uppsala model (Johanson & Vahlne, 1977, 2009; Vahlne & Johanson, 2020), we offer a conceptualization linking the nano- and micro-levels (see Figure 1). We understand human behavior and judgment as nano-level phenomena of large importance in all rudiments of, for example, the Uppsala model and for IB research in general.

Drawing on insights from the field of behavioral strategy (Powell, Lovallo, & Fox, 2011), we first offer a brief sketch on various traits of human behavior and judgment that we believe influence commitment decision-making and knowledge-development processes that drive change in the Uppsala model. We then discuss interdependencies between the nano- and micro-level phenomena of the Uppsala model’s change mechanisms, for the moment leaving aside the state variables (Johanson & Vahlne, 1977). However, as we illustrate in Figure 1, we believe that two interacting levels also define the state variables in the Uppsala model—namely, capabilities and commitments/ performance. One example is the degree of commitment, where a powerful individual can affect the firm’s commitment. Furthermore, we also exclude a discussion on other-level phenomena, such as macro- and meso-level. An example of a macro-level variable of interest would be the psychic distance; an interesting meso-level variable is the network positions of important competitors (Johanson & Vahlne, 2009).

NANO- AND MICRO-LEVEL INTERACTIONS IN COMMITMENT PROCESSES

In this section, based on our general model (see Figure 1), we use the example of human behavior to exemplify our conceptualized interaction between the nano- and micro-levels for commitment processes within the Uppsala model. In the Uppsala model, an opportunity and risk management mechanism drives change (Johanson & Vahlne, 1977, 2009; Vahlne & Johanson, 2020). Resource allocation decisions are made when there is a reasonable positive trade-off between the expected benefits and the downside outcomes of an opportunity (Figueira de Lemos, Johanson, & Vahlne, 2013; Johanson & Vahlne, 1977; Schweizer, Vahlne, & Johanson, 2010). The relationship

![Figure 1](image)

Figure 1  Nano- and micro-level interactions in the Uppsala model. Note: As Vahlne and Johanson (2017) indicated, the two change processes affect each other, though indirectly, via their impact on the state variables, in turn triggering additional change.
between potential benefit and potential loss is a quota. We refer to the cut-off value of that quota – namely, the value above which the firm commits resources to the opportunity – as the risk limit. Risk equals (even if probabilities cannot be measured) the subjectively perceived chance times that resources are at stake (cf. March & Shapira, 1987). We believe that the quota of perceived benefits and risks often grows because learning, creation, and trust-building are continuously ongoing, the risk limit is immobile, and more opportunities gradually become attractive as most evolutionary processes are incremental. We further argue that the perception of a benefit-loss quota related to a particular opportunity is dependent on not only facts, such as the position of the focal firm and its competitive situation, but also cognitively and emotionally biased evaluations by the individuals involved in the process (George & Dane, 2016). For example, studies in IB show that a manager’s perception of differences between domestic and host market conditions affect their decisions (e.g., Armstrong, Cools, & Sadler-Smith, 2012; Francioni, Musso, & Cioppo, 2015). Human behavior has a defining impact on change through intermittent decision processes related to committing/not-committing resources. Decision-makers with bounded rationality face uncertainty and goal ambiguity (Vahlne & Johanson, 2020), which are, in turn, products of intersubjective processes attributing meaning to events (Brownlie & Spender, 1995). Previous empirical IB studies have highlighted decision-makers’ cognitive systems as explanatory factors of the firm’s decision-making process (e.g., Acedo & Jones, 2007; Sommer, 2010). Cognitive processes influence how managers acquire, process, and organize internal and external information (cf. Kozhevnikov, 2007; Smith, 2007). Cognitive processes are subject to the manager’s personality (George, 2000) and are difficult to leave/change (Raffaei, Glynn, & Tushman, 2019). Cultural intelligence influences the degree of local adaptation (Ang, Dyne Van, Koh, Ng, Templer, Tay, & Chandrasekar, 2007), and agreeableness and emotional stability facilitate the acquisition of market knowledge (Chollet, Geraudel, Khedhaouria, & Mothe, 2016). Due to high ambiguity and uncertainty in the internationalization process (Schweizer et al., 2010) and the need to be responsive to social and other environmental requirements (Gavetti, Greve, Levinthal, & Ocasio, 2012), managers employ judgment. A manager’s goal orientation – that is, an actor’s goal preferences in achievement situations that guide achievement-related behavior and task engagement (Domurath, Coviello, Patzelt, & Ganal, 2020) and are stable over time (Button, Mathieu, & Zajac, 1996) – influences judgment. Emotions and moods, which are relatively immediate, transient, and flexible over time (Weiss & Beal, 2005), play a central role in humans’ cognitive processes and behaviors (George, 2000). Whereas emotions are highly intensive feelings triggered by specific internal or external stimuli (George, 2000), a mood is not directly linked to a specific event (Frijda, 1993). Therefore, a decision can be influenced not only by emotions that arise from the decision at hand (Lerner, Li, Valdesolo, & Kassam, 2015), but also by the mood at the time a decision is made (George & Dane, 2016). Decisions are also influenced by experience-established heuristics. Using feedback loops from, for example, previous internationalization processes, a manager learns what works and what does not (Bingham & Eisenhardt, 2011). We believe this mechanism is close to the notion of the “problemistic search” (Cyert & March, 1963). In line with Schneider and De Meyer (1991), who argued that strategic processes are influenced by managers’ individual characteristics and group dynamics (in our model, the nano-level), the internal organizational context (in our model, the micro-level), and environmental factors (the meso- and macro-level, which we excluded from this commentary), in our conceptualization, the micro-level constitutes the context of the nano-level processes. Hence, the micro-level context influences the deeds on the nano-level. Romanelli and Tushman (1986) pointed out that existing organizational arrangements, structures, systems, processes, and resources constrain future strategic decision-making. Another example is that performance experienced by the focal firm affects attitudes and experiences of the individuals engaged (George & Dane, 2016). In addition, Cyert and March (1963) concluded that superior performance expectedly lowers the intensity and form of the information search. The experiences brought about by a newly appointed company president may also have a strong impact on commitment levels and the willingness to try actions outside of the present scope of ideas, such as through the application of analogical thinking (Pontikes & Rindova, 2020). Figure 2 summarizes how we conceptualized the...
nano- and micro-level interactions in commitment processes.

NANO- AND MICRO-LEVEL INTERACTIONS IN KNOWLEDGE DEVELOPMENT

The knowledge-development processes, by definition, happen at the nano-level: Individuals learn, share, and exchange knowledge, all with the intention of leading to consequences at the micro-level (Herriott, Levinthal, & March, 1985). Human behavior influences knowledge development and its three sub-processes: learning, creation, and trust building. Learning can happen in several ways (Forsgren, 2002), yet learning by experience is the most important form of learning (Cyert & March, 1963; Johanson & Vahlne, 1977; Penrose, 1959). Indeed, managers’ learning and their interpretations of what they learn depend heavily on previously acquired knowledge and experiences about the environment and the capabilities of both the firm and its network partners (Vahlne & Johanson, 2017). In addition to prior experiences, learning is affected by biases because of absorptive capacity (Cohen & Levinthal, 1990) and, as argued by Bingham and Eisenhardt (2011), what we learn are heuristics for selection and procedural, temporal and priority, and simplification. Relevant contextual knowledge makes it possible to integrate new knowledge and, hence, increases the absorptive capacity (Cohen & Levinthal, 1990). The concept of absorptive capacity is applicable at both the nano- and micro-levels. In a similar vein, creation – that is, the process whereby new knowledge is developed or adjusted to be useful to the individual in his/her capacity as a manager in the business firm – is often the result of heuristics as well as subjective and intuitive processes (Vahlne & Johanson, 2017). The creation of new knowledge is built into human beings through evolution (Koestler, 1964) and thereby occurs unconsciously as a creative process influenced by, for example, emotions (cf. Healey & Hodgkinson, 2014). Similarly, we argue that trust building is influenced by prior experiences, personality traits, and emotions (Vahlne & Johanson, 2021) as trust is, to some extent, a substitute for knowledge (Morgan & Hunt, 1994; Smith, 2007).

What and how individuals learn and create depend largely on the context at the micro-level, which is the focal firm and other network actors; the context then is intentions, available resources, and level of uncertainty (Figure 3). Specifically, performance as compared with expectations may trigger an active search to be combined with one’s own experiences (Kogut & Zander, 1992; Pontikes & Rindova, 2020). Accordingly, knowledge development is not only a matter of individual or organizational processes, but can also have a collective dimension, such as the network of which the focal firm is a member (Johanson & Vahlne, 2009). Learning occurs among all actors within the network, and knowledge learned is modified and shared. This process happens over time and with many different actors involved; the knowledge is shared through organizational learning and is subsequently aggregated to the whole network (Moen, Agarwal, & Shah, 2020). Hence, phenomena at the two levels – nano and micro – are interdependent. The nature of that interdependence, with its temporal, individual, collective, and dynamic aspects, is an area of great relevance for future research. For example, internationalization knowledge, business knowledge, and institutional knowledge vary not only in their importance during the internationalization process (Eriksson,
Johanson, Majkgård, & Sharma, 2000), but also in their nano- and micro-level interactions. Whereas business knowledge learning is experiential in nature, institutional knowledge is more the object of an active search (Johanson & Vahlne, 1977).

**CONCLUSION FOR FUTURE RESEARCH**

Using human behavior as an example of a nano-level constituent, this commentary offers a first conceptualization linking the nano- and micro-levels for the change variables of the Uppsala model. We also leave the central state variables aside in this short commentary, hoping they will be the object of future study. The same is true for the interactions with the meso- and macro-levels. As already indicated in Figure 1, we believe that including the nano- and micro-level interactions does not give rise to changes in the basic processes and dynamics in the Uppsala model, which was developed for the aggregate micro-levels. In fact, in referring to human behavior as one example of a nano-level element, we argue that Johanson and Vahlne’s (from 1977 onwards) research has consistently considered – at least implicitly – the individual’s role as an important element of the Uppsala model through its critical mechanisms of learning and trust. Then again, we see an urgent need for studying the interdependency between the nano- and micro-levels of internationalization. We believe this will be a core area in future IB research, such as in explanations of inter-firm differences, especially in terms of multinationals from mature and emerging markets. Undoubtedly, other nano-level phenomena beyond the characteristics of key individuals of the firm, such as power distribution among different stakeholder groups, should be included in studies on impacts from nano-level phenomena on micro-level internationalization behavior. Furthermore, by relating commitment decisions to the ongoing discourse in research if biases are systematic (e.g., Tversky & Kahneman, 1974) or rarely so (e.g., Smith, 2007), future studies could link biases to the importance of a decision.

Another interesting avenue for further research is related to the criticism of the Uppsala model not being able to provide a theoretical explanation for non-linear and discontinuous dynamics of the process over time (i.e., firms’ leap-frogging stages; Santangelo & Meyer, 2017). By highlighting human behavior and other nano-level phenomena, it could be argued that a decision-maker’s framing of any given situation, which is in turn based on personality and cognitive processes, might result in an incremental internationalization process, although still with disruptive outcomes. Then again, although likely a rare situation, the personal experiences of an individual (e.g., a new CEO’s experiences of successful internationalization) recruited externally may lead to – at least as perceived by the focal firm – revolutionary change. To tackle inter-relationship issues between nano- and micro-level phenomena, longitudinal studies are preferable as the time dimension must be explored (Vahlne & Johanson, 2017).

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**NOTES**

1 For a recent exposition of the evolution of the Uppsala model and its contribution to the IB literature, please see Vahlne (2020)

2 Since the beginning of IB research, the micro-level is the level of the individual economic subjects, such as a firm (e.g., Johanson & Vahlne, 1977, 2009), but also of individuals, such as managers (e.g., Coviello et al., 2017). To distinguish between the firm and individuals, Vahlne and Johanson (2017) use the milli-micro-level for the latter. We maintain such a distinction but, advocating a metric system logic, we name the level below the micro-level the nano-level to avoid confusion (cf. Thompson & Hart, 2006)

3 We emphasize learning processes that occur between individuals and across networks, although we acknowledge that an individual’s learning also affects organizational decisions and behavior (see Niittymies and Pajunen (2020) for a recent review on the role of cognition and learning in firms’ internationalization)
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