

# The Entwinement Logic of Practices

## Insights from an Ethnography of Young IT Professionals

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**Abstract.** This paper seeks to place the phenomenon of technology within the context of everyday practices using the logic of practical rationality. We draw some insights from our ethnography of young professionals and shed light on their everyday technological practices by invoking the concept of entwinement from hermeneutic phenomenology. Our findings reveal that the new generation users are becoming intimately entwined with information technologies in their everyday practices. Our study contributes toward the ongoing debate concerning the theorizing of technology and its relationship to practice.

**Keywords:** fieldwork, practical rationality, research methods, ethnography, Heidegger, entwinement.

## 1 Introduction

The question concerning the nature of one's interaction with technology remains open in information systems (IS) research [13, 21]. This question is further problematized by recent scholarship suggesting a rise of new generation of technology users [26, 27]. The young tech-savvy people, often labelled as Digital Natives, Generation Y, Millennials, or similar, are seen as absorbed in information technology (IT) in their everyday practices. Given that IS scholarship is concerned with the nature of people's interaction with technology, this contemporary phenomenon might shed some light on the key question regarding how to conceptualize IT in everyday practices. For example, if the new younger generation of users are indeed technologically savvy, then some of our IS theories which assume that people either resist technology or at least have some difficulty accepting it, such as technology acceptance model and its variants [17, p. 380], will be challenged and might need to be revised.

We find the shift in practices intriguing and begin by inquiring about the nature of one's technological immersion in everyday practices [15]. Accordingly, we take the view that in order to interpret practices it is important to see them through the logic of practical rationality; thus, we find an anchor in Heidegger's analysis of being-in-the-world which is grounded in the everyday practices from a practical perspective [9, 10]. Heidegger reminds us that we are 'always already' involved in the world in our mundane situations [5]; from this perspective, it is thus possible to interpret a phenomenon from *within* the practices in which people are already absorbed rather

than conceptualizing practices externally, or taking an objective view. We find further support in the critical interpretation of being-in-the-world as *entwinement*, developed by Sandberg and Tsoukas [23]. They suggest that researchers need to study practices from an immersion perspective insofar as, following Heidegger, the people, too, are always already absorbed in their practices. They call this absorption our everyday entwinement in the world and provide a framework to study it. In this way, we find the interpretive concept of entwinement is appropriate for understanding everyday technological practices.

We draw on some of the insights from our critical ethnography of the everyday practices of young IT professionals in a large scale technology organization. The ethnographic method is suited to the study of the practices from an immersed point of view as it allows the field researchers to engage with the participants in their practice worlds [12, 23]. Our findings reveal that the entwinement logic of technological practices can be seen from three perspectives namely, purpose, skill and equipment. This multi perspective view sheds light on how young IT professionals are intricately entwined with technology in a holistic way in their everyday practices.

The paper is organized as follows. We first elaborate our theoretical perspective and highlight the significance of practical rationality. Next, we spell out the concept of entwinement from practical rationality, followed by interpreting the everyday practices as entwinement. We then present some evidence from the field regarding entwinement. The article concludes with a brief discussion and a few suggestions for further research.

## 2 Theoretical Perspective

We ground our inquiry in the everyday perspective on practices through Heidegger's analysis of being-in-the-world using practical rationality [10]. Heidegger's influence regarding the study of practices has been acknowledged in the parallel disciplines of organization [1, 8, 24, 28], management [22, 23], and computer science [4, 30]. Some IS researchers, too, have invoked Heidegger's hermeneutic phenomenology to criticize Cartesian trends in IS research [2, 3, 16]. According to this critique, IS research is dominated by theories that can be best described as espousing scientific rationality [e.g., 13, 21]. In this strand of research, everyday situations are often conceptualized through detached scientific worldviews. However, recent critical organizing scholarship redirects the attention of IS researchers to employ practical rationality, as developed within hermeneutic phenomenology, in order to understand the complex and mundane nature of everyday practices [22, 23]. In this way, it is possible to understand a practical phenomenon from *within* a practice in which one is usually absorbed rather than looking through an external objective lens.

In the practical immersion perspective, Sandberg and Tsoukas [23] suggest, building on the concept of being-in-the-world, that "we are first absorbed in practice before we start reflecting on it" (p. 345). Accordingly, they interpret one's everyday entwinement in practice as follows:

the notion of being-in-the-world stipulates that our most basic form of being is entwinement: we are never separated but always already entwined with others and things in [a holistic whole within] practice worlds. (p. 343)

Following Heidegger [10], they suggest that entwinement is the logic of everyday practices insofar as we can only understand a practice in relation to other practices, things and people in which it is entwined with [23, 24]. This argument finds further support in Dreyfus [5] who, too, suggests: “we can only describe the phenomena as they show themselves and show how they fit with the rest of human existence” (p. 162). From this perspective, a practice is seen as “noncontingent,” Sandberg and Tsoukas [23] articulate, inasmuch as “it incorporates distinctions that provide its practitioners with a certain [spatiotemporal] orientation, without which the particular practice would not be what it is” (p. 343). We thus note that the entwinement perspective is found to be holistic as it suggests researchers should take note of a multi perspective ‘nexus of practices’ of participants within which they are usually absorbed in their everyday situations.

Insofar as the entwinement perspective puts forward an absorbed holistic view, we can then ask the question, how can one grasp the phenomenon if we are always already absorbed in our practices? The answer is found by interpreting instances of temporary breakdowns in established practices [14, 23, p. 344ff]. A temporary breakdown in practice temporarily brings the otherwise unreflective absorbed interaction to the fore and provides an opportunity to understand the practices. Prior IS research has shown that the temporary breakdowns in practice are a fruitful way to understand practices [4, 30]. There are two types of temporary breakdowns in practices which reveal the logic of entwinement [23, p. 347ff]: i) first order breakdowns and ii) second order breakdowns. While the former are unforeseen, the latter are caused by active intervention in an on-going practice; thus the latter are excluded from our research as it contradicts the ethnographic principle of non-intervention. Our inquiry, thus, deals with first order breakdowns in practice which are triggered by unexpected outcomes, deliberate reflection, as well as deviations or becoming aware of differences in an established practice (*ibid*). Given space limitations, a full scale discussion of breakdowns is not possible here, but for critical research on breakdowns in organizing practices, see Chia and Holt [1], Gibbs [8] and Sandberg and Dall’Alba [22]. Next, we develop entwinement as our main lens to understand technological practices.

### **3 Interpreting Technological Practices as Entwinement**

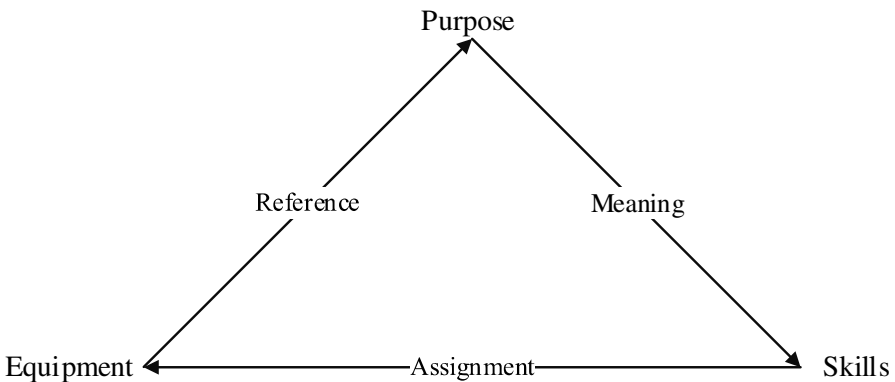
Insofar as IT is increasingly becoming ubiquitous in everyday practice [26, 31], the new generation of users are often described as being deeply absorbed in their everyday technological practices. Consistent with the hermeneutic of entwinement, people are, thus generally seen as interacting transparently with IT [27], or simply entwined with it. Accordingly, as one engages with IT, mundane disruptions such as device failure temporarily bring the otherwise transparent practices to the fore. The technological practices, thus, becomes available for inquiry by the virtue of temporary breakdowns in practice. As shown earlier, an instance of breakdown might reveal the

complex logic of entwinement in terms of our material interaction as well as the aspects of time and space within which the practice breakdown occurs.

In the entwinement perspective, a practice is both sociomaterial and spatiotemporal by the virtue of our being-in-the-world [22, 23]; here, a practice is interpreted as an “organized, open-ended spatial-temporal manifold of actions” and is always found to be in a holistic ‘nexus of practice’ [24, p. 471]. In this way, a practice is intelligible only when it is interpreted in the light of other entwined practices in a nexus. Accordingly, we take IT as holistic equipment which is entwined in our everyday practices through our being-in-the-world and thus dispersed over space time. A nexus of practice thus beckons to take a multi perspective view on the phenomena. According to Heidegger [10] the things that we relate to must be understood as part of the world that we also are part of, arguing thus: an instrument is what it does and this in a context of assignments. Accordingly, following Heidegger [10], and building on critical interpretations developed by Dreyfus [5] and Sandberg and Tsoukas [23], we note, IT when seen through the dialectic logic of entwinement is argued to be what it is in terms of,

1. Skills – in terms of actual usage of IT,
2. Equipment – as a holistic whole of IT in relation to one another, and
3. Purpose – within a situation and in relation to the holistic equipment and skills.

The concept of entwinement, hence, paints the dialectic as a circular relationship with no specific center (Figure 1): we can understand the purpose of technology that is referenced in the actual use; the purposeful use is, then, related to skills and yields meaning in a practice; and, similarly, the skills make sense through the purposeful use and also determines the use of a technology by assigning it to a task in order to achieve a goal. When one aspect is broken, or a perspective is not taken into account, the dialectic faces a practice breakdown.



**Fig. 1.** Entwinement logic of technological practices

The conceptual understanding, as illustrated in our suggested entwinement model, stems from Heidegger’s [10] being-in-the-world analysis, through the interpretations

developed by Dreyfus [5] and Schatzki [24], to reveal the logic of everyday technological practices. Heidegger's insight concerning the entwined trinity of equipment, skills and purpose in everyday practices is already used in seminal studies of complex tool use in IS scholarship [30]. In this way, we support and extend the concept of entwinement which, too, builds on Heidegger's thesis, arguing thus: the entwinement logic of practices suggests taking the holistic being-in-the-world perspective in order to interpret the everyday use of technology. When taking the holistic understanding of technology, the entwinement perspective discloses that the cyclical triad logic of our everyday practices is perpetual, or trialectic in nature. Thus, the technological practices are seen as transparent as long as we fluidly interact with our surrounding world; only a breakdown in any of the relations will bring the dynamics of practices to the fore. Recent developments in critical scholarship have suggested that such breakdowns are not necessarily destructive since a moment of critical reflection may allow us to develop new skills [8, 14]. Subsequently, the newly acquired skills tend to move to the background of everyday practices as they persist in everyday use, the entwinement, too, becomes transparent once again.

Thus, we can say that the technology in everyday practices of younger generation can be seen as deeply entwined as holistic equipment always available (e.g., ubiquitous IT), which is then persistently used for various purposeful use leading to acquisition of new skills as well as everyday understandings. In this way, the entwinement logic can reveal how IT is conceptualized in the everyday practices of new generation users. We will now discuss the details of our ethnographic inquiry from which the entwinement lens stemmed, followed by some evidence from our fieldwork.

## 4 Research Method

We conducted a critical ethnography, spanning over eight months, amongst young IT professionals in order to study the nature of their interaction with IT in their everyday organizing practices. The research site is a large scale provider of technology services, GenOrg, a pseudonym. Our reason for choosing this organization was the presence of a high number of young IT professionals engaged in complex technological practices within an organization. Further, we followed interpretive field research guidelines [12] in our ethnographic inquiry [18, 19].

After the initial contact with GenOrg, followed by a series of meetings with their senior management, one of the researchers, the first author, joined their IT department, GenTeam, in August 2013. The onsite researcher worked as a part-time software engineer. Thus, the field researcher was at the coalface of organization as a working member of a project team. Further, being an employee meant that complete access was provided to the GenOrg IT systems as well as a window of opportunity to be absorbed in their practices.

The GenTeam consisted of mostly fresh graduates or people in their first two years of employment whereas the managers were more experienced. Interestingly, as we will reveal, in their technological practices, the actual use of IT is found to be blurred and any stereotypical generational references were absent. This is perhaps due to the highly technical nature of organizational work which further problematizes their absorption in IT. Thus, we find ourselves in a complex mesh of technological practices.

By the virtue of being an active member, as also suggested by Sandberg and Tsoukas [23, p. 350], the researcher's role was extended from a mere observer to "a temporary participant" thus acquiring the capacity to observe temporary breakdowns in the transparent practices of participants from their perspective on the field practice. In this way we were also able "to get practitioners to step back from what they routinely do" (Ibid) and reflect on their practices. We thus also found participants as "interpreters and analysts" of our ethnography as we immersed deeper in their field practices [12, p. 74].

Consistent with the ethnographic method, the data was collected primarily through participant observation. The field researcher being an active team member allowed us to document field notes containing "thick description[s]" [7, pp. 3-30] of weekly project's meetings and user groups' meetings, video-conferencing logs, informal chats, internal instant messaging service logs, internal communications using organization's e-mail service, photographs, audio notes and working with organization's internal knowledgebase. All our field notes were documented either on the spot, where the situation permitted, or soon afterwards. By the virtue of an active team member, it was often possible to document events while being absorbed in the field practices, or often as an event unfolded. Further, on many occasions the participants were aware as the field researcher switched between the ongoing practices to documenting the field notes. The field notes were almost always taken digitally, usually on a workstation or using a mobile device where possible.

We also conducted 10 semi-structured qualitative interviews with select participants [20]. The interviews ranged from an hour to two hours. While most interviews were semi-structured, some participants were quite candid during the interview and thus tended towards being more unstructured insofar as we followed the narrative painted by the participants. Further, we adhered to the guidelines suggested by Myers and Newman [20] regarding qualitative interviews. Finally, all of our data was captured and coded using NVivo. Given the massive amount of data collected over eight months, we draw on just a fragment of this evidence for this paper.

## 5 Evidence from the Fieldwork

Here we present our interpretation of a single significant issue from three different perspectives in an attempt to shed some light on the intricacies of the entwinement. All examples are written from the field researcher's point of view.

### 5.1 Entwinement Perspective – Purpose

We begin with a seemingly mundane event from the fieldwork when I was asked to join an expert user group meeting. Although the meeting was routine for GenOrg, we documented an instance of a temporary breakdown in practice during the discussion of the GenWeb architecture. The meeting was quite informal and steered by a young technical analyst, Tom. During the course of the meeting, it became quite clear that some of the users were struggling to grasp the latest infrastructural level changes in their flagship software product. Many of such people were longtime users and considered themselves confident in the use of the GenWeb software tools. However, we

observed that the new changes, although subtle, were significant as they threatened and thus revealed the otherwise transparent practices of the users. Tom listened to the many critical conversations, regarding the proposed change in established technological practices, and then demonstrated, on a large screen, how intuitive the new changes were. Contrary to the claim of some users, his point was that many people are simply sticking to ‘the decade old technological practices’. This is what he said:

We are in the future, people... And have you ever noticed [that with] the technology... you can do some amazing things, like stream in real time [etc.] but people don’t get excited because they are used to it and they just expect it to work so if anything [referring to GebWeb software] stop working, people [complain]: ‘ah, typical technology, not working anymore’ (smiles). (Excerpt from the usergroup meeting)

He went on to reflect that instead of attributing the failure to the technologies, the organization users need to find more clever ways to interact with the new tools. Later on, he brought back the question of intuitive purposeful use of technology in everyday organizing practices and emphasized that most of the users face difficulty because they take IT with an inherent purpose either as a ‘fixed’ solution or something ‘special’ which needs to be used only in a set way. Consider the following remarks as Tom discusses with the user group how they can use the GenWeb technologies as a tool and encourage them to modify it up to their purpose and needs:

When you are using [GenWeb], it is a *tool*, and as a tool it can be used well, it can be used badly. And, I think, the number one thing that you can always do to create success is [by]... *being intuitive with it*. (Excerpt from the usergroup meeting)

He then listed several technical examples of complex use of organizational tools. Elsewhere in the field, we observed the use of GenWeb as a tool within the GenTeam everyday practices as well. Many people used the organizational software services for more than one purpose, sometimes entwining personal and organizational lives. For instance, the IT platform that hosted GenWeb knowledgebase was also found to be used for personal notes, work notes, as well as a communication medium within the organization. Many participants casually told me that such uses were not intentional but increasingly became part of their practices. Further, the purposeful use of organizational equipment, driven by the skills of users, revealed that the practical purposeful use of technology mattered to these participants quite a lot. As Tom said:

[IT] is all about your personal choice, and it is driven by your personal interest, all you have to do it then just use it as you like it. (Excerpt from the interview)

Here, we observe the participant puts emphasis on the use of IT through personal involvement (rather than having a fixed use or a static purpose). We can, then, say that through entwinement logic of practices the purpose is disclosed as a plastic concept. Tom, and many others, linked the unintentional but purposeful use of IT to their acquisition of skills. This is discussed next.

## 5.2 Entwinement Perspective – Skills

After a few months in the field, we observed that some young participants were quite often *playing* with new technologies on their own accord. Some participants were also working on the latest software solutions. While there were others who were not participating in such endeavors, they were at least aware of their skill level. As one young participant, Amy, (who was not working in a pure technical role), gasped after praising a programming solution, as developed by a colleague, “I wish I could do that, but this is not for me.” When I inquired casually, why the programming skill is ‘not for her?’ she explained that she is curious and finds it as an interesting skill but she had ‘no purpose’ to do so. She was somewhat doubtful about simply gaining the skill without engaging in a purposeful use. She recalled that once a colleague tried to teach her programming skills, “I just didn’t know what to do with it; there was no real task anyway,” she giggled timidly.

The question concerning technological skills was further problematized by a young developer, Tom. Despite being a keen programmer, Tom painted a mundane picture of technological practices and says the young people, as he discussed and mirrored his own perspective, ‘seem to have better skills’ but they are simply using it intuitively rather than ‘thinking about it’. In an interview, Tom reflected on this very phenomenon regarding new generation’s practices as something banal:

[We are] the people who can naturally pick up new technologies, and are intuitive... [for example] learning a new smartphone is so simple, it’s easy [because] it makes sense... people [like me] who are at least grown up with enough technologies to know, how it happens, how it generally works, you know. They are not double-clicking the thing that needs single clicking and so forth (laughs). (Excerpt from the interview)

Astonishingly, his confessional insight became a prophecy as we witnessed a similar breakdown event in a project meeting soon afterwards. The meeting involved a demo for GenWeb mobile features on a touch screen tablet device. In this demo, the users were required to perform ‘right-click’ functionality. However, insofar as the touch screens usually do not have right-click due to absence of mouse like interfaces, it caused some confusion among some team members; thus, a breakdown in ongoing practice, as documented in this excerpt from the field notes:

The [touch screen tablet] is passed around to see a specific touch functionality, [a senior manager] wonders: “but how do you right-click on this thing,”... [a young participant] then teaches her how right click works [on the tablet] and [the manager] looks genuinely surprised on this discovery, but asks: “but why do you need to right click on a tablet, it doesn’t make sense,” and [the younger participant] reply is affirmative: “I think it’s for the people who are *stuck* in the old design. (Excerpt from the field notes)

The breakdown incident further reveals two interrelated concepts; first, the technological skills actualized differently for different people. For instance, the manager who didn’t know how to interact intuitively, thus a breakdown occurred in technological



practices. However, as the breakdown brought forth the practices for inspection by becoming aware of a phenomenon, the manager correctly recognizes the flaw is in the design not his or her own practice. Thus, the senior manager's skills converge toward new generations' practices. Second, a conflict in practice actualization triggers another subtle temporary breakdown via unexpected outcome i.e., click functionality. Thus, it brought the entwinement to the fore again as the young participant reflected on the nature of design which, again, usually remains hidden. We thus observe how skills are subtly entwined with purpose and equipment.

### 5.3 Entwinement Perspective – Equipment

Perhaps the entwinement of technology in everyday practice is best seen from the equipment perspective. We observed in the field how fluidly members of GenTeam interacted with IT in their practices. We also acknowledge that, from the periphery, it might appear as an 'organizational norm' to be amidst many technologies; however, the case in point is to precisely open up the said taken for granted practices for scrutiny especially as technology is increasing becoming ubiquitous in everyday life (as well as at work). For instance, Tom, like many other participants, worked on multiple technologies simultaneously, often including virtual IT solutions where a physical machine was not present; further, he revealed that he was also an avid gamer in his spare time. In this perspective, he compared the ubiquity of IT in his mundane affairs to the complex organizing technological practices and found a failure is equally 'annoying' insofar as certain technologies are seen as essential as 'a feature of life':

[a technological tool] breaking down [is frustrating after] it becomes accepted technology [as] *a feature of your life*, and [because] you come to accept that it is there [whether at work or home], and you come to accept that it is working, and so, you are used to that and start to forget about it. (Excerpt from the interview)

We thus began to observe an obvious characteristic of participants' practices that technologies are seen entwined as integral and ubiquitous parts which are deemed to be working all the time. Further, a breakdown is seen as a breakdown in the life of individuals where entwinement is usually transparent and fluid. Interestingly, other participants shared this significance but their interpretations varied. For instance, Julie, a young developer, found the ubiquitous IT as an opportunity to switch to other equipment in case of a failure. Her perspective, too, brings us closer to entwinement as Heidegger [10, p. 97] points out "there 'is' no such thing as *an* equipment." Similarly, IT is not a thing on its own but always seen from one practical perspective to other things. In this way, we note the ubiquitous IT, as Tom finds, hides with persisted use in practice in that it becomes taken for granted.

The entwinement logic of practice thus begins to reveal IT as transparent holistic equipment in everyday practice. Further, IT is understood vis-à-vis the actual involved use in practices, as Julie once described how technological work practices transparently entwine with her everyday practices. Within this absorbed involvement with technology, when asked if she thinks a technology *qua* technology, she replied:

What is there to think about? Honestly. If something is new ... like a new game ... do you think about it when you play it? No, you don't. You just play it. Same thing is for technologies, like [social networks], it's just there. I give it a try, see if I like it or not. Most of things, well, you don't know whether you like it or not unless you try. So, just use it. (Excerpt from the interview)

Her insight remains unanimous among all the participants at GenOrg as most of them readily endorse the holistic view of IT as equipment. For instance, Tom, too, said, for him, interacting with IT is akin to an invisible tool which he transparently uses whereas others find it is holistically pervasive everywhere. Thus, it is not surprising, in this instance, the use of technology is found to be analogous to playing an invisible game, arguing thus: insofar as interacting fluidly with ubiquitous IT, as if being immersed in a game, is seen as intuitive, transparently purposeful, it requires absorbing oneself in the practice, and thus influences (and is itself conditioned by) practical skills. We thus suggest that the entwinement logic of practices uncovers a multi perspective view which could help IS researchers to conceptualize IT in everyday practices.

## 6 Discussion

Our study is concerned with one of the central questions in IS scholarship: how do people engage with technology in their everyday organizing practices? We provide a partial solution by looking at the new generation of users from their absorbed perspective. Our solution takes the form of interpreting the interaction with technology using entwinement logic of practice. Following Dreyfus' [6] critical approach, we reinstate to "begin with practices" in order to make sense of our complex interaction with technology.

Numerous calls have been made to pay attention to the ubiquity of technology in everyday practice [26, 31]. We respond and show that researchers and organizations can learn a lot from the everyday practices of younger generations' use of ubiquitous technology. The new generation users are found to be intuitively comfortable with technology, contrary to the traditional view which holds that people generally resist new technologies. As IT becomes ubiquitous in the everyday practices, the new users develop a rather complex automatic relationship with technology. This insight is significant for organizations to manage the younger workforce which are shown to be entwined with technology. A disruption in a fluid technological practice is seen as a disruption in everyday life. We further extend this insight to invite IS researchers to examine design practices to develop tools in a way that are 'invisible' and transparent in practice. Here, Heidegger's [10] insight has begun to manifest itself in contemporary software practices of solution designing which are, as demonstrated, intimately entwined in our everyday practices. Stroustrup [25, p. 19] remarks concerning the design of innovative technological solutions: "[g]ood software is invisible...[yet] [we] can be annoyed or hurt if it doesn't do what it is supposed to do. We can be annoyed or hurt if what it is supposed to do doesn't suit our needs." Accordingly, we have witnessed the same phenomenon in the field; thus, we can say a new conceptualization of design practices might be required in the light of the entwinement logic of practices.

We suggest the concept of entwinement might also be significant for IS research methods as it might help us review our theoretical and practical approaches in the light of contemporary technological practices. For instance, a key finding from our fieldwork is that entwinement is quite strong in young people's practices: insofar as technology is ubiquitously available, the technological practices tend to be more transparent. As one participant succinctly puts, 'it just makes sense'. Taking a cue from field evidence, we can, then, suggest taking a practical approach using practical rationality toward conceptualizing information technology. In this way, it might be helpful for researchers to understand how a technological phenomenon manifests in practice and, then, interpret it according to and from *within* the very practice which envelops it [5, 10, 23]. Taken together with the preceding insight concerning transparency of technology, we note that the entwinement perspective can further bring the design and practice aspects within IS scholarship closer to develop better tools and systems.

We have also shown the significance of an absorbed perspective on practices to grasp IT in everyday situations. In our ethnography of young professionals, who are found to be absorbed in their technological practices, we have uncovered that for the new generation users, IT is increasingly seen as a hidden tool interwoven in their transparent practices. Further, our fieldwork reveals that new generation users find using the technological tools as intuitively engaging in an invisible *play* like dialectic. This evidence strongly relates to the entwinement's underlying roots of absorption in practices [5, p. 66], and within such absorption, "not only is equipment transparent; so is the user." As shown earlier, only a breakdown in practices brings our attention to technology with which we are invisibly engaged in, our entwinement otherwise remains hidden. In this perspective, this is exactly what we have observed and interpreted as the entwinement logic in the field practices.

Our field evidence thus endorses the view that information technology can be seen as holistic 'invisible' equipment which not only remains hidden in practice but in fact should remain in the background for one to work smoothly [29]. Although practice breakdowns are critical to inquire about the practices, the researchers and organizations need to ensure the breakdowns are minimal. To sum it up, the ubiquitous IT is becoming increasingly transparent, it is only when it breaks down that we find how deeply entwined we are with it in our everyday practices [10, p. 188ff, 15, p. 282, 303].

## 7 Conclusion

We have suggested the entwinement lens as a significant theoretical and practical tool to study the shifting ways of engaging with technology. Contrary to the prevailing perspectives grounded in scientific rationality of practices, we offer an absorbed perspective to interpret the practical phenomena from within contemporary everyday practices using the practical rationality of entwinement. In this way, IS researchers can critically examine the everyday practices by stepping in rather than stepping out of the practices. The entwinement perspective thus invites field researchers to be closer to field practices. Some researchers in parallel disciplines of organizing and management studies have begun to investigate entwinement in more depth, specifically in

terms of practice breakdowns [14] and sense making within organizations [11, 22]. A fruitful avenue for IS researchers is to inquire the said strands in the context of technological practices. For instance, insofar as the practical rationality of entwinement discloses a play like dialectic, how can we further understand the complex spatiotemporal dynamics of such dialectic in organizing practices? Another possible way is to shed light on the significance of entwinement in skill acquisition vis-à-vis engagement with equipment through practical rationality. Thus, we find the entwinement logic of practices potentially opens up new avenues for IS scholars and practitioners alike and creates possibilities to reconceptualize and theorize complex everyday practices in a coherent manner.

## References

1. Chia, R., Holt, R.: Strategy as Practical Coping: A Heideggerian Perspective. *Organization Studies* 27, 635–655 (2006)
2. Ciborra, C.: Situatedness Revisited: The Role of Cognition and Emotion. In: Bagnara, S., Smith, G.C. (eds.) *Theories and Practice in Interaction Design*, pp. 107–116. Lawrence Erlbaum, London (2006)
3. Ciborra, C., Hanseth, O.: From Tool to Gestell: Agendas for Managing the Information Infrastructure. *Information Technology & People* 11, 305–327 (1998)
4. Dourish, P.: *Where the Action Is: The Foundations of Embodied Interaction*. MIT Press, Cambridge (2004)
5. Dreyfus, H.L.: *Being-in-the-World: A Commentary on Heidegger's Being and Time*. MIT Press (1991)
6. Dreyfus, H.L.: Reflections on the Workshop on “The Self”. *Anthropology and Humanism Quarterly* 16, 27–31 (1991)
7. Geertz, C.: *The Interpretation of Cultures*. Basic Books, New York (1973)
8. Gibbs, P.: *Heidegger's Contribution to the Understanding of Work Based Studies*. Springer, London (2011)
9. Heidegger, M.: *History of the Concept of Time: Prolegomena*. Indiana University Press, Bloomington (1985)
10. Heidegger, M.: *Being and Time*. HarperPerennial/Modern Thought, New York (2008)
11. Holt, R., Sandberg, J.: Phenomenology and Organization Theory. In: Tsoukas, H., Chia, R. (eds.) *Philosophy and Organization Theory*, vol. 32, pp. 215–249. Emerald, Bingley (2011)
12. Klein, H.K., Myers, M.D.: A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly* 23, 67–94 (1999)
13. Leonardi, P.M.: When Flexible Routines Meet Flexible Technologies: Affordance, Constraint, and the Imbrication Of Human And Material Agencies. *MIS Quarterly* 35, 147–168 (2011)
14. Lok, J., de Rond, M.: On the Plasticity of Institutions: Containing and Restoring Practice Breakdowns at the Cambridge University Boat Club. *Academy of Management Journal* 56, 185–207 (2013)
15. Mannheim, K.: The Problem of Generations. In: Kecskemeti, P. (ed.) *Essays on the Sociology of Knowledge*, pp. 276–320. Routledge and Kegan Paul, London (1952)
16. Mingers, J.: Embodying Information Systems: The Contribution of Phenomenology. *Information and Organization* 11, 103–128 (2001)
17. Morris, M.G., Venkatesh, V.: Age Differences in Technology Adoption Decisions: Implications for a Changing Work Force. *Personnel Psychology* 53, 375–403 (2000)

18. Myers, M.D.: Qualitative Research in Information Systems. *MIS Quarterly* 21, 241–242 (1997)
19. Myers, M.D.: Investigating Information Systems with Ethnographic Research. *Communications of the AIS* 2, Article 23 (1999)
20. Myers, M.D., Newman, M.: The Qualitative Interview in IS Research: Examining the Craft. *Information and Organization* 17, 2–26 (2007)
21. Orlikowski, W.J.: Sociomaterial Practices: Exploring Technology at Work. *Organization Studies* 28, 1435–1448 (2007)
22. Sandberg, J., Dall’Alba, G.: Returning to Practice Anew: A Life-World Perspective. *Organization Studies* 30, 1349–1368 (2009)
23. Sandberg, J., Tsoukas, H.: Grasping the Logic of Practice: Theorizing Through Practical Rationality. *Academy of Management Review* 36, 338–360 (2011)
24. Schatzki, T.R.: The Sites of Organizations. *Organization Studies* 26, 465–484 (2005)
25. Stroustrup, B.: *Programming: Principles and Practice Using C++*. Addison Wesley Professional, Crawfordsville (2014)
26. Vodanovich, S., Sundaram, D., Myers, M.D.: Research Commentary: Digital Natives and Ubiquitous Information Systems. *Information Systems Research* 21, 711–723 (2010)
27. Wang, Q., Myers, M.D., Sundaram, D.: Digital Natives and Digital Immigrants. *Business & Information Systems Engineering* 5, 409–419 (2013)
28. Weick, K.E.: Designing for Thrownness. In: Boland, R.J., Collopy, F. (eds.) *Managing as Designing*, pp. 74–78. Stanford Business Books, Stanford (2004)
29. Weiser, M., Brown, J.S.: The Coming Age of Calm Technology. In: Denning, P.J., Metcalfe, R.M. (eds.) *Beyond Calculation*, pp. 75–85. Springer, New York (1997)
30. Winograd, T., Flores, F.: *Understanding Computers and Cognition: A New Foundation for Design*. Ablex, Norwood (1986)
31. Yoo, Y.: Computing in Everyday Life: A Call for Research on Experiential Computing. *MIS Quarterly* 34, 213–231 (2010)