



DRS2020  
BRISBANE, 11–14 AUG  
SYNERGY



# The method of Immersive Behavioural Observation (IBO) — a conversation between theory and practice

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doi: <https://doi.org/10.21606/drs.2020.232>

**Abstract:** Observational field work is an essential part of design research. In this paper we introduce a new method for design research called Immersive Behavioural Observation (IBO). We developed the IBO method in order to analyse meaningful bodily relations to our environment, particularly in transit spaces. Human beings constantly interact with their environment and are often unconsciously guided by their surroundings. The IBO method aims to understand relations that point to a background structure embedded in space which shapes the human interaction in it. The method makes explicit an implicit, tacit knowledge that is part of our practical and purpose driven understanding of and within a place. The IBO method has its foundations in anthropological field research methods like participant and direct observation. It is also deeply influenced by phenomenology, especially Maurice Merleau-Ponty's analyses of the lived body experience and Martin Heidegger's analysis of a functional environment or "totality of involvements."

**Keywords:** embodied observation; phenomenology; lived body experience; transit space

## 1. Introduction

The method of Immersive Behavioural Observation (IBO) has been developed by us for the benefit of doing an "objective-subjective" field research. This seemingly paradoxical expression refers to subjectivity based on a shared or defensible notion of objective reality or truth. The IBO method has its foundations in traditional anthropological field research methods like participant and direct observation. Thus, we will firstly, in section two, introduce the methodological considerations in the research. This is based on the design task and the epistemic base of the work. In this section we analyse existing field research methods and discuss the nature of the new method that contains the qualities of the traditional methods but mitigates their failings at the same time. Subsequently, section three illustrates the application of the IBO method in six steps during the field work. This is a practical introduction to the theoretical parts that constitute the IBO method. The IBO



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method is discussed in detail here, with respect to its nature, building elements and the main process. Section four discusses the IBO method in comparison to other traditional methods; section five draws final conclusions.

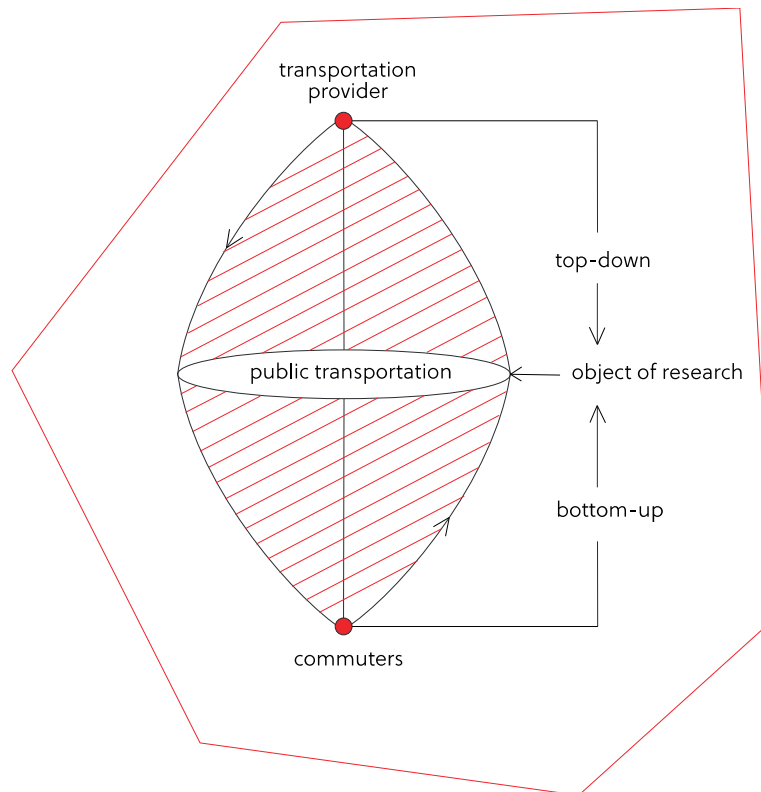


Figure 1 The system's context of the object of research

## 2. Methodological considerations

### 2.1 Design Research Task

When the IBO method was developed, the first area of investigation was at an object level (see Figure 1). The aim was to understand transit areas like stations, trains, bus stops and airports, with respect to commuters and their embodied interaction with the materiality of the space. The task was to gather insights on how commuters interact within and with the space. The built environment affects how humans behave and feel in the space, and the ways humans experience an environment effect its 'atmospheric' (Böhme, 2006) qualities as well. Therefore, it is not just the architecture of the station that influences the commuter's state of being, but the commuter themselves who also, co-create the atmospheric quality of the station. The aim of the object-level enquiry was thus, to identify, document and analyse the interaction between the commuter and the transit space. To understand how commuters in transit spaces behave at an embodied level while simultaneously achieving their goal, that is, transiting from point A to B. As the French phenomenologist Maurice Merleau-Ponty points out, the lived body movement is the pivotal element in understanding the body-

place-relationship because our body is not in space, or in time but inhabits space and time (Merleau-Ponty, 2010, p. 161). “By considering the body in movement, we can see better how it inhabits space (and, moreover, time) because movement is not limited to submitting passively to space and time, it actively assumes them (ibid., 117) [...]” Movement reveals a more fundamental form of intentionality. Thus, Merleau-Ponty understands motility as basic intentionality, as motor intentionality.

The intentions of the users of public transportation are articulated in their corporeal orientation and behaviour within the space. Through bodily movement, space incarnates meaning and significance. Over time, the body becomes acquainted with space and places are shaped. As far as bodily space is concerned, it is clear that there is a knowledge of place that co-exists with that place, but this knowledge cannot be simply converted into descriptions. This bodily knowledge is what Merleau-Ponty calls habit. Michael Polanyi calls it the tacit knowledge, “... of which we have knowledge that we may not be able to tell” (Polanyi, 2013, p.10). So, Merleau-Ponty’s notion of habit and Polanyi’s concept of tacit knowledge are related; we refer to it as behaviour, that is, the embodied interaction of the commuters towards the materiality of the space based on the task they aim to fulfil within the space. The body belongs to place as much as place belongs to the body. Therefore, transit spaces exist only in the lived presence of the commuters who sustain and vivify it (cf. Casey, 2009, p. 327).

## *2.2 Epistemological Foundation*

The aim of the collected field data is to free the design and architectural decisions from mere styling and understand the more veracious requirements of the human in interaction with the built environment. The approach here is not simply user centred but more human-material-interaction centred. Material here is everything we perceive via our sensory apparatus; like olfactory encounters, tactility of surfaces, aural quality within the space, light, humidity, temperature – primarily everything that we perceive via our senses. A study in human-material interaction documents precisely the human body in interaction with a dominant material quality of the built environment, in the given context. For example, in Figure 2 we see the commuter in interaction with the bench on a cold winter morning. He is seen misappropriating a copy of the free Metro newspaper to make his seating on the humid and cold bench more comfortable.



Figure 2 North Ealing, London.



Figure 3 Sports Complex Central, Hong Kong.

Figure 3 shows us the stairs leading to the sports park in Hong Kong. This park area is temporarily closed for cleaning. The shaded stairs leading to the sports complex is used as

seating not only by the members waiting for the park to open but also by others who need a quick break from the humid heat. Both of these examples show us how people redesign the built environment by merely using it, either alone with a prop as in Figure 2 or by physically locating themselves in a particular relation to the place as in Figure 3. Thus, we see that the data we are trying to collect exist in the interaction between the human user and the materiality of the built environment.

The information gathered in the field was aimed to serve in improving the interaction between the user and the built environment within transit spaces. Since the world is given to us in the medium of our lived bodies, we are by the very act of living exposed to places and their materiality. As John Zeisel states, “to design environments suited to what people do in them, we must understand environment behaviour.” (Zeisel, 2009, p. 136). It is precisely here, in the shaping of the materiality where designers lay the foundation for a more harmonious interaction with the place. In a way, one could say that design does not simply shapes a place but the place-body relationship.

This redesigning is often a sign of a sense of identity and responsibility towards the space, as Zeisel asserts that people who use the environments continuously also redesign them (Zeisel, 2009, p. 103). Richard Sennett calls this phenomenon ‘the open city’ (Sennett, 2018). For Sennett the open city is an ethical space that tolerates differences and promotes equality, he writes, “but would more specifically free people from the straitjacket of the fixed and the familiar, creating a terrain in which they could experiment and expand their experience.” (ibid., p.9) Healthy cities, active communities and an inclusive urban scape cannot be (completely) designed beforehand but enacted by its citizens (McGuirk, 2018). The role of the city planners, architects and designers, according to this, consists in facilitating the adaptive redesigning of the city and its transit spaces for and by the citizens.

Summarising the discussion above the requirements on the field data and the nature of information to be collected in field are as follows:

*Table 1 The nature of the information to be collected in the field lays down the requirements on the field research method.*

	<b>Requirements on the field data</b>	<b>Nature of the information collected in field</b>
1	To capture an elusive moment existing briefly between the user and the built environment.	<b>Contextual information:</b> The information we need from the field research is generated in the transitory interaction between the human user and the materiality of the built environment. This information is situational and context dependent. It needs to be interpreted in the same.
2	The information is perceived and articulated by the observer in the field, and needs to hold grounds against the usual accusations on self-collected data.	<b>Observer inclusion:</b> To be able to collect rigorous field data, the observer plays an important role. The perspective through which the observer observes the observed is an important factor that influences the quality and the nature of the field information collected.

3	An objective-subjectivity that may be used to generate a more rigorous set of field data.	<b>Recognises subjectivity:</b> The inclusion of the observer in generating data also recognises the fact that the information cannot be purely objective. But the inclusion of the observer brings in a veracity to the collected 'subjective' nature to the field data.
4	It was aimed to support design and architectural decisions that are bottom-up. The collected data was meant to understand and facilitate adaptive redesigning.	<b>Bottom up approach:</b> The field data orients itself to the user and their interaction with(in) the place. The collection of the data concentrates on the user without being overtly user centred in nature. Though, one may say the data concentrates on the interaction between the user and the place.

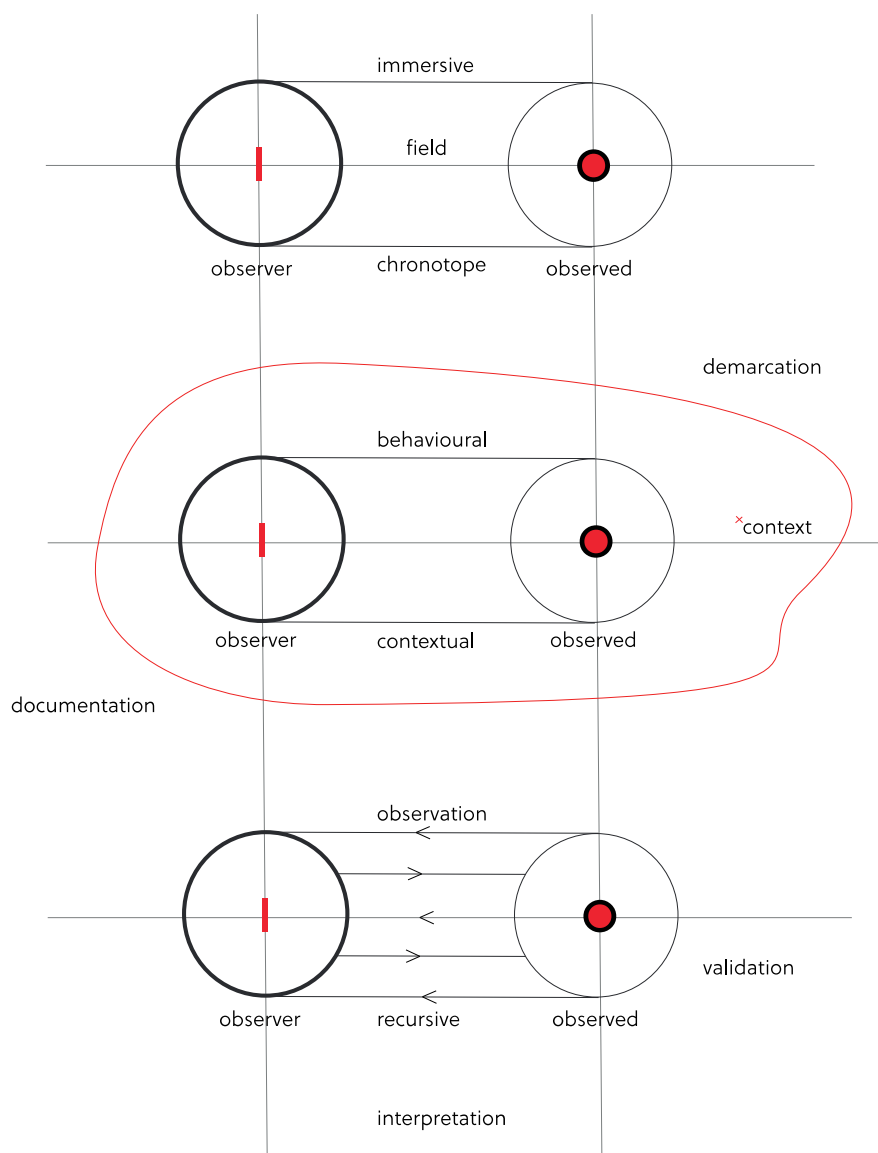
### 2.3 Analysis of existing methods

While looking for a valid method, that fulfilled the requirements on the field data and supported the nature of the information to be collected in the field, as in Table 1, we realised that the tradition of participant observation as developed in the field of anthropology from the likes of Frank Hamilton Cushing in the early 1879 (Kawulich, 2005) and Bronislaw Malinowski in 1920 (Malinowski, 1977), would only partly fulfil the research criterion. Participant observation is a qualitative method, enabling researchers to collect field data by consciously participating in the field. This is done by studying people over a longer period of time in their natural setting, by observing and participating in their activities (ibid.). The field recordings are based on observations and impinging the system that one wants to understand and document. It is an obtrusive method. Since the observed are aware of the observer, it may change the quality of the information gathered, as in the Hawthorne effect (Mccambridge, Witton and Elbourne, 2014).

As already explained, the quality of the information to be gathered is contextual and ephemerally bound to the situation. Since this information exists in the corporeal interaction of the user with(in) the place one may also call it tacit information. Tacit information is in the embodied perception of the world, via the experiencing body. This sort of knowledge, as Polanyi makes clear, is difficult to articulate very clearly (Polanyi, 2013, pp. 3-25). It is at the physiognomic level, as gestalt psychology also asserts (Koffka, 2014), the active shaping of experience happens in the pursuit of knowledge. In the context of a transit space, the researcher is aiming to collect embodied information about human-material-interaction.

Direct observation is a sub-form of participatory observation, also known as observational study. It is also a qualitative method of collecting data in which the researcher observes subjects in their usual setting without altering it (Gehl/Svarre, 2013, pp. 269-280), that is, without going in an active contact with the subject of observation. This method is largely an unobtrusive method, though it may be at times variably intrusive (Zeisel, 2009, p. 112). Direct observation is a bottom up method and was extensively used to study public life. The early documentation of this method is seen in several seminal writings about the urban landscape in the mid of the 20th century (Gehl/Svarre, 2013, pp. 269-280).

The qualities of these methods that fulfilled our field research criterion were as follows: qualitative research; prolonged stay in the field; empathy towards the observed; humility towards the field; accepted subjectivity of data collection by observation and sharing the same space-time context, as the observed. The characteristics that made the above methods not completely compatible to the research requirements were as follows: both, participant and direct observation methods, have been criticised for their structural unclarity. This brings in the usual accusation of a lack of rigour in self-reported behaviours outside a lab-setting; also, the irregularity of the collected information based on researchers gaining different understanding on the same topic has been frowned upon (ibid.). According to Zeisel, direct observation was used and developed in various forms, like observing environmental behaviour, to collect information for practical purposes like policy making or architectural planning. These methods lacked what Zeisel calls a foundational standardised procedure for observing and a theoretical framework for interpreting observations (Zeisel, 2009, p. 113).



*Figure 4 Showing the various components, elements and processes in the IBO method.*

### 3. The Immersive Behavioural Observation (IBO) method

#### 3.1 The Method

The IBO method is qualitative and subjective in its approach. It has been developed to collect data about passenger experience within transit spaces. The aim is to gain a closer insight into the research problem's wicked context. The epistemic foundations of the method lie in phenomenology, particularly in the analyses of Merleau-Ponty and Heidegger. Merleau-Ponty provides insights into bodily experience that enable tacit knowledge; at the same time, it also enables the researcher to share the placial experience with their own lived body, i.e., to immerse into the spatiotemporal situation (see section 3.2). Whereas Heidegger helps to understand the practical context in which the commuters and the researcher act. In a way, that means IBO can be considered as a form of practical phenomenology. Its goal is not just to analyse transit spaces, i.e., to gain insight in human-material-place interaction but also, eventually, to change, redesign these places based on the insights provided by IBO, so that these places become more human oriented.

The IBO method identifies, observes and works with phenomena. These phenomena constitute the field data that is collected through this method. The subjectivity in the IBO method is grounded on a shared perception of the world. Via the IBO method we work with an 'objective subjectivity', i.e., a subjectivity not seeded in fancy or muse but in the objective understanding of a joint domain of truth which accepts the diversity of individual experiences while still presupposing one shared reality (Gerhardt, 2016, pp. 131-144). IBO is used to study the behavioural and tacit patterns of users in their natural environment. It is used when other obtrusive methods like questionnaire and dialogues, involving direct participant contact is not supportive for data collection. The IBO method generates 'circumstantial evidence'.

The three stages that build the process in the immersive behavioural investigation are demarcation, documentation and decoding (see section 3.4). Of these the first two, demarcation and documentation help us in developing the first level construct of pulling together the data. Even though observation is a natural phenomenon, to be a skilful observer one needs structural clarity. This is what the first two stages, demarcation and documentation, aim to achieve. The collected information is processed in the third, decoding step to generate the second order construct of sense making and meaning generation. The last process involves validating the field findings by the method of agile dissemination. In IBO, the research is focused on the object (i.e., the observed); the observer here demarcates the field of observation (i.e., that which is to be observed). The three major components in which the practice of the IBO method is anchored are: the shared chronotope, the context and the circularity of perception between the observer and the observed. These are elaborated respectively in the next sections.



Before we delve into the more theoretical explanations of the IBO method, we present below in six steps how information about the human-material-interaction in train stations are collected with the help of this method:

1. In the field, we tune into the space being attentive to our sensory perception in it. These are amongst others the temperature, light intensity, olfactory encounters, and to the aural qualities of the environment.
2. In a world of excessive sensory input demarcating the field before the actual observation brings in a sense of consciousness to our perception. This also contributes to a greater sensory accuracy towards the task.
3. We orient ourselves in the space so as to map it. In case of train stations, we locate the exits and entry points, note the busiest zones and seek an optimal area to position oneself for the documentation.
4. Once we have positioned ourselves, we observe the commuters around us. The observation focuses on the following aspects:
  - a. Appearance: This is everything that might indicate a category of study, like gender, age and physical appearance.
  - b. Corporeal movement: How do commuters enter and orient themselves in the space? Is the gait confident and quick? Is it seeking? Is it slow and relaxed?
  - c. Corporeal positioning: How and where do people position themselves when waiting? How is the distance to the other maintained? How are seatings used? Are there artefacts like train timetable, lighting, dustbins, infotainment screens, who's proximity is sought by commuters when they wait?
  - d. Interactions and gestures: How do commuters interact with each other and the artefacts surrounding them in the transit space?
5. The observation is oriented on the above demarcation as stated in point 2. The information collected is documented with notes, sketches or candid photographs.
6. The documentation is the only phase that happens in the field. The other two phases, demarcation and decoding, happen largely off the field.

*Table 2 Representing the character, major components and the practice in the IBO method.*

<b>Nature:</b> The essential character that defines the foundation of the method.	<b>Elements:</b> This refers to the major components defining the basic structure.	<b>Process:</b> This is the chronological listing of the practice.
Immersive	Chronotope	Demarcate
Behavioural	Contextual	Document
Observation	Circular	Decode

### 3.2 Nature of IBO

#### IMMERSIVE

The researcher in IBO is doing the observing by immersing themselves in the chronotope (see section 3.3). This immersion in the chronotope generates a sense of identification (both consciously and unconsciously) and generates empathy with the observed.

#### BEHAVIOURAL

Experiencing space is never a mere passive exposure but always an active appropriation of space. The “behavioural” in the IBO method refers to this appropriation of the space where the everyday person is considered to be an agent involved in the environment.

#### OBSERVATION

This is experiencing via observing intently the everyday tasks of the subjects in real space and time. The sight is the quickest of all our senses, however, it is the totality of our sensory apparatus that navigates and orients our perception and experience through and in space.

### 3.3 Elements of IBO

#### CHRONOTOPE

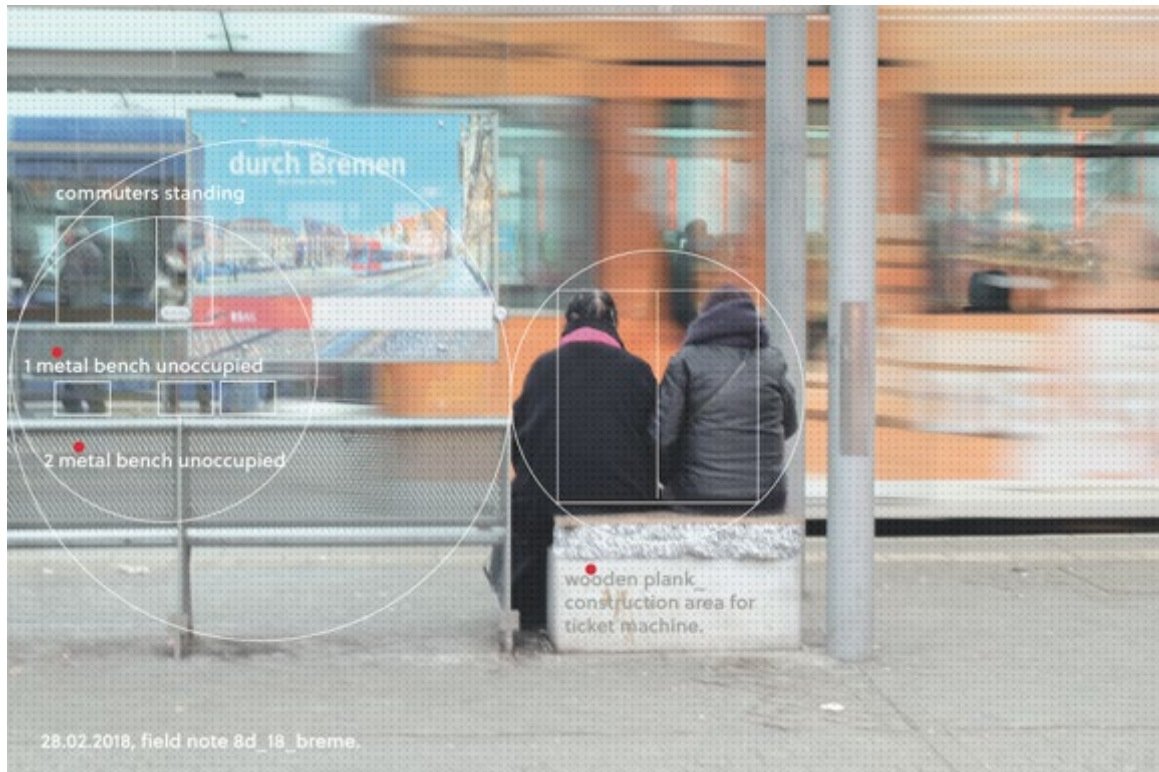
This term denotes the entanglement of time and space similar to the Minkowski space, which describes the four-dimensional space-time continuum used in theoretical physics. But at the same time, it points to the experiential entanglement of time and space as it was originally used in literary theory, introduced by Bakhtin (Bakhtin 1981, 84–258). The chronotope entails patterns of orientation and perception of those who find themselves in a place at a certain time.

#### CONTEXT

Built environments exist only in an interaction with the users. In IBO “context” refers to what Heidegger calls the “totality of involvements” [Bewandtnisganzheit] (Heidegger, 2001, 116). Involvement here describes the practical meaning, i.e., the role that things or material play in our actions. To think chronotope and context together means to understand how lived body experience plays an essential role in understanding the practical meaning of human-material-interaction.

#### CIRCULAR

Circular is used here at two levels. At the direct observational level, it implies that the observer (sharing the same chronotope with the observed) experientially comes back to oneself to understand or relate to a particular observed phenomenon in the field. The second implication is the recursive interaction with the field of knowledge. This helps the researcher identify low-frequency observations with high impact and distinguish these against high frequency observations with low impact.



*Figure 5 Central Station, Bremen.*

Figure 5 shows us how metal benches remain unoccupied during cold winter days, the temperature during the shot was  $-11^{\circ}\text{C}$ . We see three commuters standing near the 1st metal bench. The two women, near the second metal bench are squeezing together on the wooden plank. The pedestal with the wooden plank was a part of an incomplete construction for a ticketing machine.

### *3.4 Process in IBO*

The three steps, demarcation, documentation, and decoding define chronologically the processes that build the IBO method.

#### DEMARCATION

Even though the method of observation is a common tool that humans use daily, observing in the field without omitting details or transferring untested feelings with the field data is an act that requires a conscious effort. This is where demarcation plays an important role. Though the act of demarcation happens in the field in which the researcher shares the same chronotope as the researched, it is determined by the main research objective that requires the field work. The process of demarcation followed by documentation generates information that constitutes the first order construct. “Construct” here doesn’t mean ‘making up’ the phenomenon which we want to analyse but to demarcate it, to accentuate it and bring it in the foreground.

The world is submerged in a plethora of activities. We are constantly using our sense of distinction at various levels to navigate us through this plenitude of information. For example, if my objective is to locate a salesperson in a supermarket, I would only look for people in the particular uniform. What we choose to observe depends upon the objectives with which we direct our consciousness (Zeisel, 2009, p. 101). This is what demarcation deals with. It is about the articulation of our objectives based on asking the right questions. Therefore, the core act of demarcation is the articulation of the task on to the field. This helps one to draw the distinction between what will be observed to what will be overlooked because of directed attention.

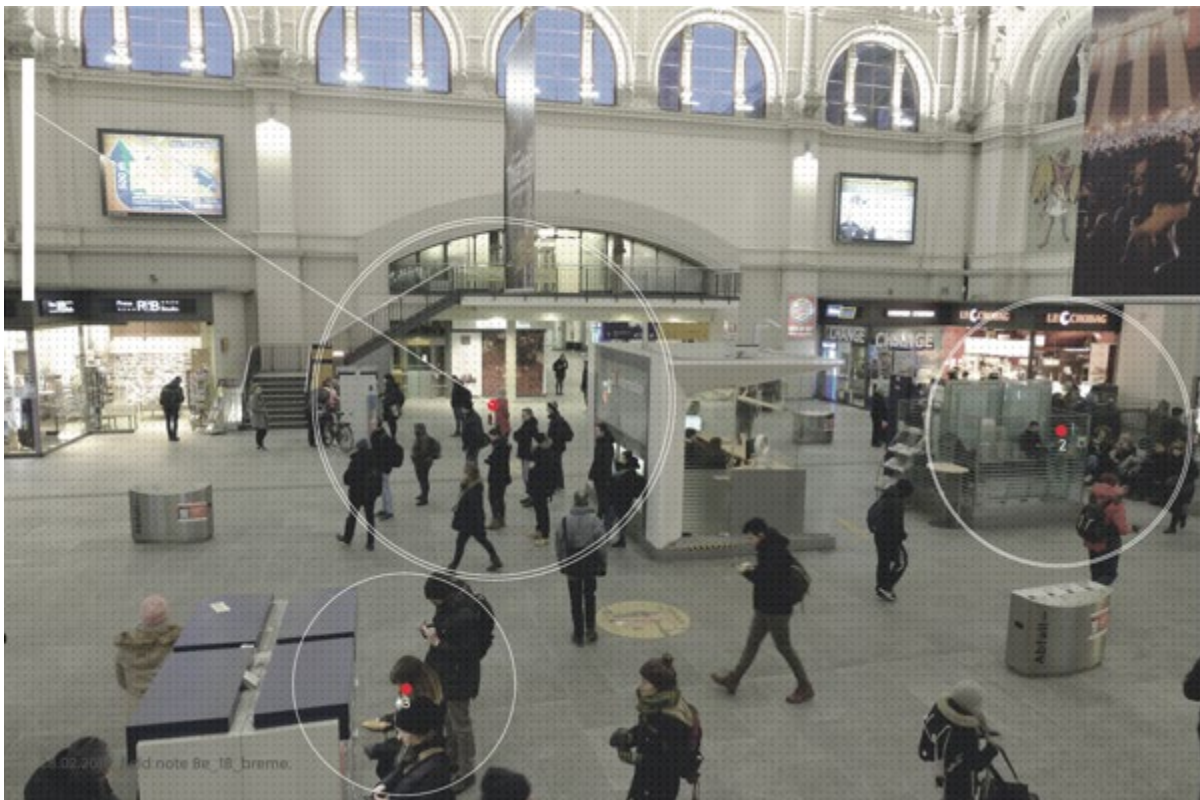


Figure 6 Central Station, Bremen.

Figure 6 shows commuters gathering in a particular formation within the train station because of several train delays and the freezing temperature outside. This example also shows us that the process of demarcation holds ground only when the observer shares physically the same chronotope as the observed. To realise the uneasiness of the cold or humid temperature that makes the commuters orient themselves in a particular way and maintaining the contextual awareness of the field, that is in this case, the train station and the delays.



*Figure 7 Inside a metro train, Vienna.*

In Figure 7 commuters remain standing during a journey despite the availability of vacant seats. The journey lasted for most of them between 30-40 minutes. The standing commuters were young, the journey was recorded at around 18:00 h. For most of these long-standing passengers it was important to support their back in two axes preferably a corner and have their hands free instead of using the hangers above.

#### DOCUMENTATION

In the IBO method the collection of data happens essentially within the shared chronotope with the observed. A focus of the documentation lies on the particular cognitive and symbolic ordering of space and how the users orient themselves in these spaces. In the process of IBO, the observer's sharing of the chronotope with the observed is integral to the process of documentation. The distance to be maintained with the observed is based on the intended task. By documenting the interaction of the object in its natural chronotope, we accept knowledge born out of lived interactions, which are shared bodily experiences in the everyday world. IBO deals with embodied observation, where the body of the observer is used as a navigational and perceptual tool. The perception of the observer is informed by the whole of their sensory apparatus, that is, the visual in relation to the other senses.

The documentation of the embodied observation is done particularly by candid photographs, taken over a prolonged period of time (see Figures 2 and 3; in contrast to the field-sheets which include also various notes, see Figures 5, 6, and 7). Unlike visual anthropology where the use of the camera to gather visual information is essential for capturing everything

otherwise overlooked by our limiting perception (Collier/Collier, 2009, p.6) the method of IBO uses the candid photography to make a quick note of what has already been registered by the senses. Time is a crucial factor for documentation and ample time is spent to acquaint oneself with the place. A recursive engagement with the object of knowledge is essential. Apart from this, field information may be gathered as sound recordings, field notes, sketches, floor plans, maps etc. The information collected in the field are to be maintained as observational notes, with clarity of time, schedule and content; comments and emotional descriptions to the field notes are to be refrained from at this stage (Zeisel, 2009, p. 95). The candidly taken photographs and other materials are only objects for future retrospection and are not meant to be in themselves an act of contemplation. These documented materials are to be regarded as an impression of the lived experience and not as the experience itself.

#### DECODING

In the IBO method, the third step of decoding entails the interpretation of the data. This interpretation is the second order construct. The IBO method allows us to record behaviours within their original unadulterated context and natural time frame. Our inferences induced directly from these embodied observations in the shared chronotope is the second order construct. Second order construct also means to understand and elaborate the experiences we shared in the field carrying out the immersive observation. The IBO method documents phenomena, these are 'circumstantial evidence'— coming into existence in the human-material-interaction. This information is the first order construct and is the material we work on in the decoding process. Here we follow the inductive reasoning to come to inferences and generate the second order construct. The inductive method implies finding a certain reasoning and then observing if the same reasoning functions in other cases as well.

As mentioned earlier the method of IBO abstracts users in categories defined by their purpose, by their gender or by their age. For example, if the IBO method is used to understand the human-material-interaction in a hospital, the actors in the field of observation would be classified into patients, nurses, doctors, other staffs and visitors. In IBO the individual's history and their (current) emotional states are not necessarily considered, although IBO does consider the stimulus-response procedures of social conditioning. IBO investigations, though detailed, are made considering the general categories and not by registering situations at the individual level. This level of abstraction is important in the study of public life, as it makes the working with large number of data manageable. The generalisation also helps in preserving the privacy of the individuals in this space.

The 'circumstantial evidence' generated by the IBO method refers to the directly observed and documented phenomena in the field. Unlike direct evidence, circumstantial evidence allows for more than one explanation. It follows the inductive reasoning to come to inferences. In decoding, the inductive method implies finding a certain reasoning and then observing if the same reasoning functions in other cases as well. As mentioned earlier, the context of the recorded phenomena, the demarcation with which one embarked the field plays an important role here. This is also what allows circumstantial evidence to have more

than one explanation. Therefore, context and demarcation of the recorded phenomena also collaborate in drawing conclusions. As together they may strongly support one particular inference over other alternative explanations that may be ruled out.

The final stage of the IBO process validates the inferences developed in decoding, the second level constructs. The validation of these findings is achieved by discussing the initial analysis of the field data via the 'agile dissemination' method. An agile dissemination process could be sub-categorised as a tool under the participatory design method, where important phases of the research development are simultaneously disseminated or shared with varied user groups. The agile dissemination is carried out to share key insights of the field research. This opens the research and its developments to various stakeholders, users and expert audiences. The agile-dissemination method comprises of presentation and discussions. During an agile-dissemination session the presentation is structured according to the IBO method. It introduces the research task, the context of the work, the field and the demarcations. This is followed by the presentation of the observed phenomena and the inference categories that give us an insight to them. After the presentation the field research inferences are opened for critic and discussions. The reactions and quality of discussions vary largely depending upon the group amidst which the agile dissemination happens. In the case of the public transportation systems, when the validation happened with transportation providers and policymakers, the discussions did not challenge the field findings but went ahead to discuss the actual decision itself. The first process in the IBO method, that is, demarcation ensures self-scrutiny, the agile dissemination, which is the last process, ensures external scrutiny.

Agile dissemination also, plays an important role in validating field results within their respective cultural contexts. As explained earlier, the documented phenomena in the IBO method are to be understood in the nuances of the given context, and not removed from it. The researcher in the IBO method is an outsider and a marginal participant; the benefit of this is that the field remains true to its usual flow of things. The downside to this is that the observer might document a particular phenomenon accurately but not understand it in its larger socio-cultural context. This might lead to varying degrees of misinterpretation of the field data. This is where agile dissemination compensates the field findings. The principal lead in the agile dissemination discussions is the researcher in the field; they are obliged to report all the conflicts and assertions they receive during the sessions but they are nowhere obliged to abide by any of them. Agile dissemination is an explicit procedure that increases the likelihood that different explanations to a certain observed phenomenon in field are comparable, enabling a more grounded interpretation and evaluation of the field findings.

## **4. Discussions**

The IBO method attempts to compensate what Zeisel and others call a foundational lack of standardised procedures for observing and interpreting by building in a theoretical framework (Zeisel, 2009, p113). This is done by bringing in a procedural clarity in the

method by identifying and defining the major components and the processes of the method: demarcation, documentation, decoding. The results then need to be validated through agile dissemination. The researcher demarcates that which is to be documented against that which may be ignored by the observation. Demarcation is based on the articulation of the intention with which the researcher defines his or her task in the field. Documentation helps us collect the information that constitutes the first level construct. Decoding involves building the second level construct from the gathered field material. The final process is that of agile dissemination of the analysed material. This assures validation of the second level construct by external scrutiny.

In articulating the conditions that make up the core foundation of the IBO method, this method does not just make tacit knowledge that implicitly underlies our action explicit, it also aims for methodological transparency, i.e., to make its steps and the result from each step explicit so researchers are enabled to reflect on the process.

*Table 3 Comparing the pros in more traditional field research methods with the new IBO method.*

<b>Pros</b>	<b>Direct Observation</b>	<b>Participant Observation</b>	<b>IBO Method</b>
Non-obtrusive	yes/maybe	no	yes
Qualitative research	yes	yes	yes
Prolonged stay in the field	yes/maybe	yes	yes
Empathy towards the observed	yes	yes	yes
Humility towards the field	yes	yes	yes
Sharing the same spatio-temporal context as the observed.	yes/maybe	yes	yes

*Table 4 Comparing the cons in more traditional field research methods with the new IBO method.*

<b>Cons</b>	<b>Direct Observation</b>	<b>Participant Observation</b>	<b>IBO Method</b>
Obtrusive	no/maybe	yes	no
Structural unclarity	yes	yes	no
Lack of rigour in self-reported behaviours outside a lab-setting	yes	yes	no/maybe
Irregularity of the collected information based on researchers gaining different understanding on the same topic	yes	yes	no/maybe
Lack of a foundational standardised procedures for observing	yes	yes	no
No theoretical framework for interpreting observations	yes	yes	no



## 5. Conclusions

IBO as a design research method asks the question what it means to not just cognize the world but to understand it as shaped by design, particularly our embodied experience within spaces. In accordance with Ludwig Wittgenstein, Otl Aicher explains that usage as a new truth criterion: “listening and looking become an act of philosophy, and not a thinking operation within a complete system anymore. Wittgenstein is now saying to his pupils: ‘don’t think, look!’” (Aicher, 2015, p. 88). In a way, this is what IBO tries to do: to observe the interaction, in this particular case between the human and the material within transit spaces. But in order to understand the complex relationship between the user and the built environment, to simply look at it is not enough. This is the reason why the observation in IBO has to be immersive, so as to partake in it via the medium of the lived body. IBO investigates the relationship between the lived body and its interaction with the materiality of the built environment, via sharing the same chronotope as the observed. Here, the processes of immediate experience and intuition gain a certain significance in comparison to mere abstract rationalism and science for understanding reality. The IBO method by being immersive in nature and sharing the same chronotope as the observed enables a sense of identification with it, resulting in a natural empathy towards the observed and the spatial context.

## 6. References

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