The Journey to the Grave – Evaluating a Swiss Cemetery Wayfinding System Using Shadowing Techniques

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Note

Additional images to provide context for this article can be found on pages 51-58.

INTRODUCTION

Signage – A System for Orientation and Information

Signage systems combine different design disciplines with the communicative intention of assigning a specific place its own, individual visual profile. Intelligent, sustainable systems of orientation and information guide and accompany a visitor while enabling them to experience the space in question, creating a sense of identification and identity. This discipline operates at the interface between graphic design, communication design, industrial design, scenography, architecture, interior design, landscape architecture, and urban and regional planning. This interdependence means that signage requires an interdisciplinary approach and perspective (Schmid, 2013).

Signage communicates by means of writing, typography, signs, pictograms, and colors on different materials. These signs are intended to ensure that people unfamiliar with an area can reach their desired destination and, depending on the context, are also informed about the locality. Signage uses visual, haptic, and auditory media to help people find their way around a space. Employing signs and elements that suit different needs can help to ensure that the recipients' varying capacity to process information is taken appropriately into consideration.

Abstract

Signage is an aid to wayfinding and individual orientation in both organisations and everyday life. It aims to respond to users' needs. Whether or not it actually succeeds in this can only be empirically verified by an evaluation that is tailored to the context in question. Spacious cemeteries are a particularly interesting case, as they are a place both of mourning and of relaxation. When visitors in a fragile emotional state want to find their way to a grave, they have to be able to depend on particularly effective signage. The present study of a pilot project at the Zurich Sihlfeld Cemetery in 2022/2023 uses a "shadowing" methodology in such a context for the first-ever time. This is because other common approaches to evaluating signage are inappropriate here for ethical reasons – whether these be surveys, giving test subjects specific search tasks, or using eye-tracking. We observed and assessed 49 target persons across all the segments of the cemetery in their general orientation behaviour, the degree to which they consulted the signage offered, and their use of other aids on their way to the burial in question. We used our observations to analyse deviations from the ideal access routes; our photographic records provide us with a basis for further optimisation measures.

35

Signage concepts are based on a classical communication model, according to which an act of communication always features a sender and a recipient (Watzlawick et al., 2016). An optimal system of orientation and information will send out signs and signals that the receivers can decode and understand. In this context, it is further assumed that a hierarchy of information can help structure the information communicated and make it easier to comprehend. The ordering principle in signage ("orientation – direction – identification") serves as the basis for signage-system planning (Mollerup, 2005). To what extent a signage system meets all these requirements in practice is something that has to be tested empirically, with the suitability of the possible evaluation methods being derived from the conditions on the spot. This is illustrated by the following case study, in which the shadowing method is used to evaluate a wayfinding system at the largest cemetery in the city of Zurich.

Case Study Sihlfeld Cemetery in Zurich – Starting Point

The city of Zurich runs 19 cemeteries with a surface area totaling 1,289,000 square meters. Roughly 2,900 burials or interments take place there each year. The signage in the Zurich cemeteries has up to now been somewhat ineffective, contrary to its actual objectives. It used to be difficult for many visitors and family members to find their way around the cemeteries: in some cases, in fact, quite impossible. Time and again, visitors were unable to find their way to funeral services, graves, or toilet facilities. Information on burials, interments, and grave removals would be posted on the central notice board and sometimes at the grave plots in question. The cemetery offices, which serve as enquiry points, are irregularly staffed and deserted on evenings and at weekends.

To remedy these deficiencies, the municipal office responsible (*Grün Stadt Zürich*) launched a study in 2019 to choose a planning team suited to developing a site-specific signage concept for the city's cemeteries, a concept that would also promote the creation of a specific identity for them. The team would be responsible for implementing a pilot project at the Sihlfeld cemetery and then utilize their experiences and the feedback acquired to create a

definitive signage manual for the cemeteries of the city of Zurich.

The signage at the city's cemeteries should demonstrate a uniform approach to design, color, and material language, both outside on the cemetery grounds and in the public buildings on the site. By combining visitor and service information, everyone ought to be sure of receiving the information they need in an intuitive and targeted manner. *Grün Stadt Zürich* wanted a unified signage system not least to provide better wayfinding guidance for visitors, family members of the deceased, and clients.

The new signage system, entitled "Memory Landscapes" was introduced in 2022 and provided a new orientation plan that aimed to achieve its impact through iconographic representations of the architecture and by introducing individualized reference sites ("Plätze") throughout the cemetery. It was hoped that creating easily recognizable elements would reduce complexity in a small space and create a clear means of addressing the visitors. What's more, the best route is shown clearly. The information hierarchy was devised and formulated in detail. This signage concept "Memory Landscapes" was subjected to a partial evaluation in 2022/2023.

Evaluation Approach

The focus of the evaluation presented here is on problems faced when finding one's way to a funeral. This is because the cemetery administration had practical past experience of a significant need for improvement in this area. Evaluation approaches that used surveys, guided interviews, focus-group interviews, giving test persons specific search assignments, or using eye-tracking were all impossible to adopt because of the precarious, emotionally sensitive situation of the mourners who were the target persons. In this situation, the obvious decision was to resort to the method of shadowing, which is generally used in other contexts. It is a technique in user research where the researcher accompanies the user and observes how a product or service is employed in a natural environment. Shadowing helps the researcher comprehend existing behavior so designs can be adapted to it (Interaction Design Foundation [IxDF], 2020). From a wider perspective,

Quinlan (2008) further emphasizes that the use of shadowing is particularly effective in exploring *behavior in everyday life*: "Shadowing entails a researcher closely following a subject over a period of time to investigate what people do in the course of their everyday lives, not what their roles dictate of them" (Quinlan, 2008, p. 1482).

Müller and Straatmann (2011) sum up the advantages of observation methods: "Observation as a means of data collection allows one to make an authentic record of situational circumstances in combination with people's behavior at the time . . . One of the main advantages of observation is that actual behavior can be captured directly and in the moment that it occurs. With a survey-based approach, however, one is compelled to rely on retrospective reports" (p. 329). More specifically, shadowing is a form of nonparticipant observation where the researcher only observes and records the behavior and emotions of the target person. The focus is on behavior, not opinions.

"Shadowing" is used to describe a technique for learning language—thus "a learner repeats what he/she is listening to, just as a shadow follows someone walking" (see e.g., Hamad, 2019), though it is also utilised in market research for analysing service processes, in organisational research (institutional ethnography; e.g., Possas & Medeiros, 2017), and as a job-training method (e.g., McDonald, 2005). In the case of service quality and customer behavior, a study by Gimpel et al. illustrates the possibility of using "shadowing" to evaluate wayfinding at an international airport (Gimpel, 2021); in other words, shadowing was used to track and map a passenger's "journey" within an airport, combined with subsequent interviews.

Shadowing techniques are increasingly being used in healthcare settings, such as for observing unresponsive patients and disabled people (e.g., Tyldesley-Marshall et al., 2020; van der Weele & Bredewold, 2021). Kevdzija and Marquardt (2022) used the "observe only approach" (in view of the speech impairments of patients) to investigate wayfinding among stroke patients in the built environment of a rehabilitation clinic where the distance between the patients' rooms and the therapy rooms is challenging. Gualandi et al. (2019) used shadowing to explore a hospital patient's journey from admission to discharge. The observational data acquired were combined with patient and staff interviews to highlight the patients' principal emotions. The "shadowed" patients gave their consent, and this in itself might well have influenced their behavior while they were shadowed.

When evaluating wayfinding systems in healthcare, Bubric et al. (2021) applied a user-centered approach. Participants were asked to complete X number of routes in an allotted space using proposed signage and other wayfinding strategies, the goal being to identify opportunities for improvement. In preventive healthcare, so-called behavior settings theory is drawn upon when using shadowing to observe behavior in daily life, and to provide more informative prevention messages (Park et al., 2022).

All of the above studies were situated in an organizational framework or private settings in which shadowing was contingent upon the informed consent of the participants, and complementary interviews had to be conducted. This naturally resulted in numerous ethical and methodological problems (Johnson, 2014). The "observe only" shadowing approach of the present study was used to evaluate the wayfinding behavior of visitors at a funeral (in other words, the "journey to the grave"), and since the Zurich Sihlfeld cemetery is an open, public space, there was no need to brief the visitors being observed. This meant we were able to analyze their wayfinding behavior in a natural, unbiased context.

Objective

The objective of the present study is to explore the circumstances related to signage and other general factors that contributed to the late arrival of visitors for a scheduled funeral, and then to outline possible improvements to the current wayfinding system. The results of this study will help to determine important planning principles in a manual for a new signage system at all cemeteries in the city of Zurich from 2024 onwards.
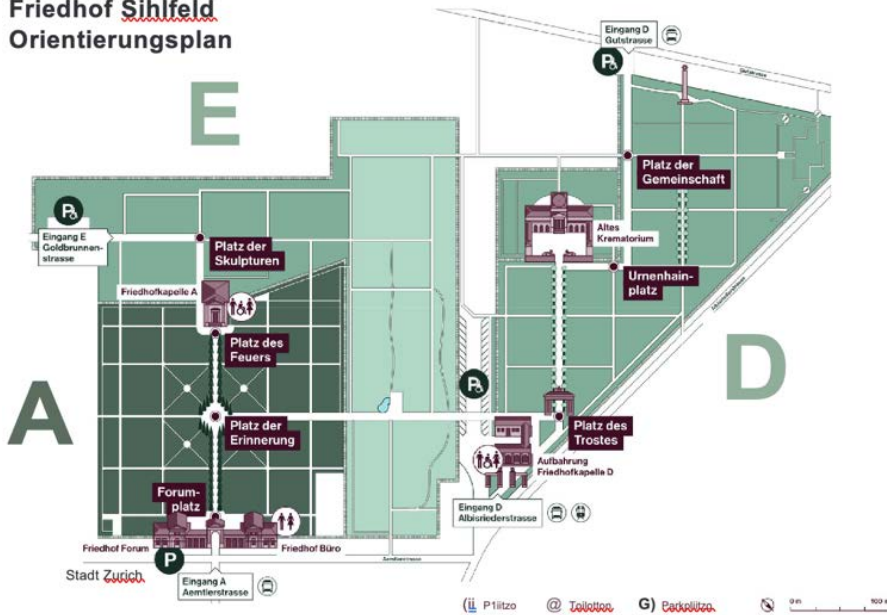
37

Image 1

Sihlfeld Cemetery (28.5 Hectares) – Orientation Plan

METHODS

We carried out a stratified quote sample with regard to the 8 observation days available to us, the burial sector, the access routes to the burial site to be observed, and the selection of the people to observe on these routes.

Local Selection of the Burials to be Observed and the Observation Days

To get a representative, overall picture of orientation requirements, burials, and interments had to be taken into account in all sectors (A, D, E); see Image 1. When burials and interments were to take place at the same time, those in sectors A and E were to be preferred for observation because burials occur less frequently there. Our aim was also to observe burials and interments in communal burial plots and at individual burial sites. Whenever possible, half-days were selected on which at least two burials/interments were to take place one after the other so we could carry out as many observations as possible.

Determining the Access Routes to a Destination (the Grave and the Burial Area) Where People Were to be Observed

The "shadowing" was assigned either to the route "entrance – reference site ("Platz") – grave" or to "entrance – chapel." For each burial selected, the signage concept defined an ideal entrance and a subsequent ideal access route (see Image 2). Observers were positioned at the entrance defined as the starting point.
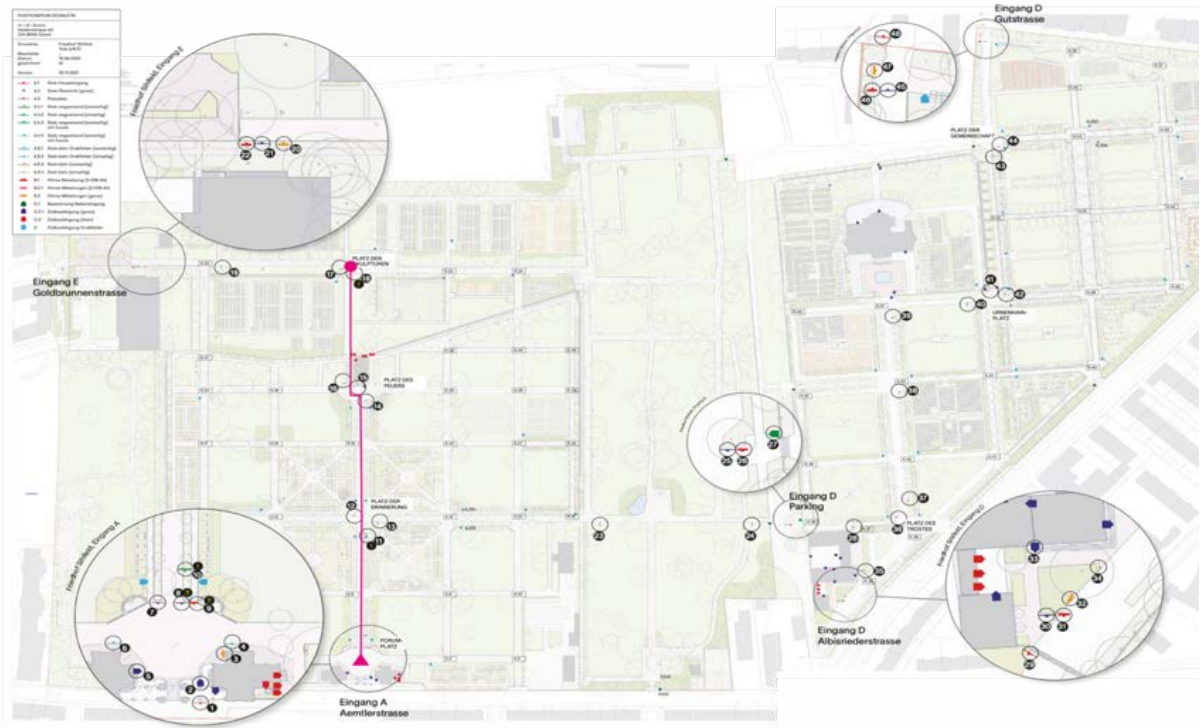
Image 2

Ideal Route to the Funeral, Based on the Signage Concept: Example for Target Sector E

Selection of Target Persons to be Observed

Mourners who came to the cemetery for a burial/interment were relevant for shadowing; we excluded those visiting graves, those using the area as a park and those just out walking. As far as possible, we took care to include people with notable characteristics that could potentially impinge on their ability to orientate themselves, such as the visually impaired and people with limited mobility. Our selection of mourners was made as randomly as possible. In the case of groups of grieving persons, we selected a "leader" from among them who determined the direction they took.

Field Organisation/Procedure

Over 8 days, two observers were deployed simultaneously for 4 hours (i.e., one half-day). They had all been trained in detail in advance and had been instructed in how to use the observation form. As a rule, 2 days before the survey days were planned, the cemetery office would inform the project managers about the burials that were due to take place. As soon as it was decided which burials should be observed, staff from the m—d—buero design and research, who were responsible for the signage concept, drew up an ideal route for each burial/interment. Once on site, observers were given a printed-out map of the Sihlfeld cemetery with the ideal paths and starting positions marked on it.

Observation Procedure

A mourner arrives early at the predefined entrance and is then shadowed as they move towards the grave. The person observing then goes back to the ideal entrance and observes the next person. This means there is usually more than one observation made for each burial route.

In the event a target person realized they were being observed, the observers were provided with an official letter. The observers were also given official ID cards by the survey institute GFS-Zürich to identify them as observers/survey team members and to legitimize their presence at the Sihlfeld cemetery, should they be approached. No one confronted the observers with shadowing, but two people were on the brink of asking for help/directions. One person was a young woman with a child and was visibly stressed out. Some eye contact was made and if the observer had been closer, he/she probably would have been asked for assistance.

Instrument

The observers/shadowers were each given a map of the cemetery on which the ideal routes were marked for reaching the planned burial. During the observation process, the shadower marked the path actually chosen and traversed; *event codes* were entered on the map in line with an observation sheet on which the observers recorded the following:

- The behavior of the target person when taking their route, in particular any deviations from the ideal route, and the punctuality of their arrival at the place of burial. The place at which the person being observed deviated from the ideal route for the first time was recorded by means of additional photo documentation.
- The target person's use and/or observance of signage elements when following their route was determined according to a three-stage differentiation model provided in advance by m—d—buero, and was then entered onto the observation map;
- Any other orientation aids used by the target person were noted according to type (maps, mobile phones, other people, etc.) as was the extent to which such aids were used by them;
- The target person was categorized according to gender and age, and the observer noted their mental state and any impairments on their part;
- Any notable characteristics of the context were recorded, such as acts of group orientation, the weather, and any additional or explanatory comments by the observers.

The data, including open questions and comments, were processed using the software SPSS Statistics 29 0.1.1.

RESULTS

1. Observation Sample

On 8 observation days from 23 March to 8 August 2023, 49 people were "shadowed" at 17 burials. These included 14 burials in Sector D (41 observations), one burial in Sector A (seven observations), and two burials/interments in Sector E (six observations). This distribution accurately reflects the burial statistics for 2022: out of a total of 412 burials or interments, 77% took place in Sector D, 16% in Sector E, and 7% in Sector A (personal communication from S. Brunner, Product Manager of *Grün Stadt Zürich*, on 7 February 2023). This means the data gathered is at least partially representative of the burials in the various sectors. .

As mentioned above, when selecting the people to be observed, the project managers endeavored to achieve the most diverse possible sample group that was socio-dynamically as representative as possible. Men and women were almost equally represented among those observed (47% were men, 53% women); people in pairs were observed the most often on their way to a burial site (43% of whom were men, 39% women), but, at the same time, people moving in groups were observed (these were predominantly women, at 38% compared to 22% who were men); finally, individual visitors were also observed (35% men vs 23% women). The estimated age of the people observed meant our sample had a near-normal distribution across different age groups.

Table 1 / Sample Characteristics: Age Group by Gender

	Estimated age group		Older than	
	18–39	40–59	60	Total
Male	n = 2	n = 10	n = 11	n = 23
Female	8	14	4	26
	80.0%	58.3%	26.7%	53.1%
Total	10	24	15	49
	100.0%	100.0%	100.0%	100.0%

It is not possible to undertake any benchmarking with regard to the individual and contextual characteristics of the people being observed (which was indeed possible with the statistics available for burials by sector, as explained above). But at the same time, it seems plausible that the observation data collected here do not depict any extreme or atypical situations. As far as the *validity* of the data is concerned, it is significant that these observations were well spread across the different "shadowers" employed (no single observer made more than 37% of the observations), so we do not have to anticipate any undesirable fatigue effects or learning effects.

2. Criteria for Success

Our evaluation's core aim was to determine the extent to which the new signage concept can prevent or reduce the *late arrival of mourners at the burial site*, something that was often observed and criticized before the signage was introduced. In this regard, it is assumed in each individual case that following the route marked out—which here means *taking the ideal route*—plays an important role.

We recorded the exact amount by which the arrival time of the people shadowed was divergent from the officially scheduled starting time of the burial. Of the 49 "shadowings" conducted, some three-quarters of the mourners (*n* = 36; 74%) arrived on average 11 minutes before the start of the funeral, while a quarter (*n* = 13; 27%) arrived on average 10 minutes after the start (see Table 2).

Table 2 / Arrival Time Deviations, Based on the Official Schedule of the Funeral

Latecomers	n (%)	Early birds	n (%)
1–3 minutes late	7 (54%)	5–9 minutes early	16 (44%)
8–10 minutes	3 (23%)	10–15 minutes	11 (31%)
11–45 minutes	3 (23%)	16–32 minutes	9 (25%)
	13 (100%)		36 (100%)

Figure 1

Lateness of Visitors Exiting or Following the Ideal Route, in Minutes (n = 13)
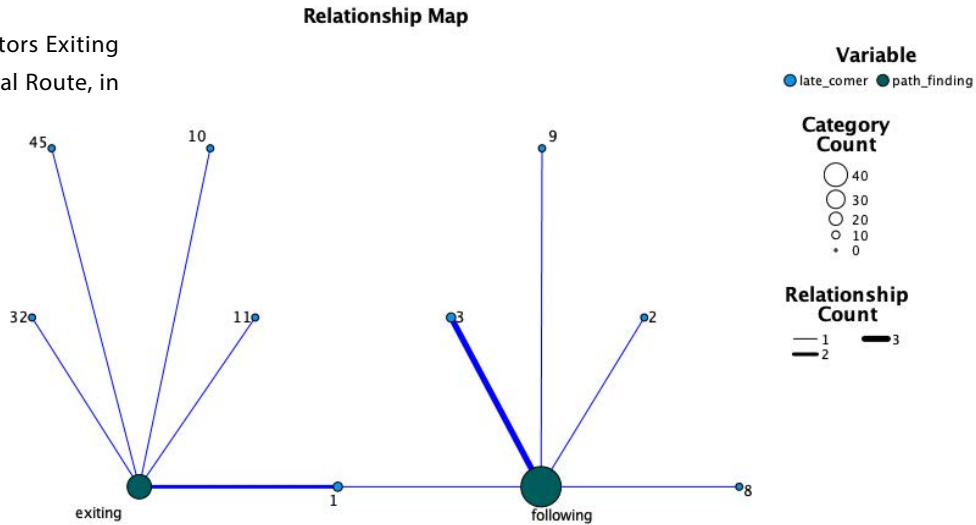
Twenty-seven percent of mourners arriving too late is a considerable amount and suggests a need for adjustment. It means there should be a detailed examination of the extent to which the signage on the access routes might be a contributing factor. There may also be weak points in the communication chain because in two cases much of the delay can be attributed to the mourners having arrived too late at the cemetery (23 and 40 minutes, respectively). Either they did not receive any advance information on the size of the cemetery, or they received it but ignored it. It should be noted that the act of shadowing made it possible to record people's arrival times accurately; this would hardly have been possible if retrospective surveys had been employed instead.

We have to ask whether the time deviations depend on whether or not people follow the ideal route according to the signage concept, and to what extent adjustments to the signage could prevent these delays. Further analysis shows that in 25 out of 49 cases (51%), there was at least one deviation from the ideal route. However, a closer look revealed that eight of those people diverged from the ideal route because they were following the example of others. This cannot be "blamed" on the signage. The remaining 17 people who took a divergent path (35%) thus form our central reference group for investigating the reasons for people leaving the ideal route.

We must examine the extent to which people's arrival time and their adherence to the ideal route are related to each other. Are those who take a divergent route also typically those who arrive late? Of the 17 who took a divergent route, 35% (*n* = 6) arrived late, compared to only 22% (*n* = 7) of the 32 who took the ideal route. However, this difference is significantly relativized if we consider the uneven distribution of the delay times. On closer inspection, the "latecomers" represent a far more heterogeneous group than the "early birds," which is expressed in a standard deviation that is twice as high (sd = 13.4 vs sd = 6.9). The following visualization (see Figure 1, "Relationship Map") clearly shows that those who deviated from the route had *far higher* delay times (between 1 and 45 minutes) than those who were faithful to the route (1 to 9 minutes). However, we must also consider that a significantly late arrival time at the cemetery played a role in two cases.

Conclusion

Following the ideal route influences one's arrival time at one's destination, and a detailed examination of the 17 cases of divergence from the ideal route is therefore important if we are to make any appropriate signage adjustments. Other determining factors and influencing variables such as the use of orientation aids and characterizing the behavior of the persons shadowed could quite possibly be utilized to implement improvements, independent of the signage.

3. Influencing Factors on Wayfinding

General Signage

The observers recorded not just whether people kept to the ideal route but also the extent to which the target person accepted what the signage "offered" (i.e., if they gave the various signage elements their attention, and if so, for how long). The signage elements were categorized by the signage developers in advance as either "very important," "important," or "unimportant." For purposes of further analysis, the percentage of all signage elements that received attention was calculated to illustrate their "utilization success" with visitors.

What significance does using signage elements on the ideal route have for those who deviate from it? Table 3 shows that people tend to adhere more to the ideal route the more attention they pay to the signage elements. Ignoring the "unimportant" signage elements is of no consequence, but those who deviate from the ideal route reveal a higher proportion of nonobservance (0% means they paid no attention to any elements on the route) than among those who adhered to it, namely 94% vs 72% for the "important signage elements," and 65% vs 41% for the "very important" elements.

Table 3 / Degree of Attention Paid to the Signage, According to Importance and Fidelity to the Ideal Route

Degree of attention given	Pays attention to "unimportant" signage elements		Pays attention to "important" (!) signage elements		Pays attention to "very important signage elements"	
	Adheres to route	Diverge	Adheres	Diverges	Adheres to route	Diverges
0% (none)	n = 24 (75%)	n = 13 (77%)	23 (72%)	16 (94%)	13 (41%)	11 (65%)
1–25%	n = 8 (25%)	n = 4 (23%)	2 (6%)		2 (6%)	
26%–50%			6 (19%)	1 (6%)	7 (22%)	1 (6%)
51%–75%			1 (3%)		6 (19%)	4 (24%)
76%–100%					4 (12%)	1 (6%)
	N = 32 (100%)	N = 17 (100%)	N = 32 (100%)	N = 17 (100%)	N = 32 (100%)	N = 17 (100%)

Commentary: The total number of signage elements on each ideal route was related to the actual degree of attention they were given and their use, depending on the importance assigned to them: 100% means all the elements that can be consulted along the ideal route were actually used; 25% means, for example, that only a quarter of the elements on the ideal route in question (regardless of whether this was long or short) were consulted.

These group differences confirm our assumptions, though 75% of those adhering to the ideal route still followed it despite ignoring the "important" elements, with 41% of them doing so despite ignoring its "very important" elements. This indicates other factors may be involved in influencing the path people take that could not be registered by our study (such as people possessing prior information or familiarity with the cemetery, etc.).

Other Factors

The extent to which people use various aids for orientation and wayfinding can be interpreted as a means of compensating for gaps and weaknesses in the signage. At the same time, by naming the different reference sites ("Plätze") and principal axes

in the cemetery, the current signage concept makes it easier for people to identify where they are when trying to find their way around.

The observers therefore noted when a target person resorted to the use of other aids while walking, and for monitoring/relativization purposes they also assessed their state of mind and behavior.

Wayfinding Aids

When people sought help to find their way, their primary resort was to use their mobile phone, either to call up Google Maps or to contact other people; the next most frequent tactic was to seek advice from others in the cemetery (see Table 4). The locations where such aids were most often used were the Platz des Trostes and K38 (K=Kreuzung=intersection 38 on the cemetery plan).

Table 4 / The Use of Wayfinding Aids on the Spot

| Where was the aid used? At a specific site ("Platz")/ intersection	Checks mobile	Googles on mobile	Printed map	Sympathy card	Asks groundsman	Asks someone else	Total
Intersection 38, "Platz des Trostes"	1	1	3	1			6
Forumplatz	2	2					4
K37	1				1		2
Entrance D, Car park	2					1	3
Urnenheinplatz		1				3	4
Platz der Skulpturen						1	1
Intersection 36		1					1
K41		1			1		2
K43			1				1
K42			1				1
K32					1		1
K47					1		1
Total	6	6	5	1	4	5	N = 27

Condition of The Target Person

Fifteen people gave the impression that they were "stressed" or "confused," and 15 people also "stopped and looked around in a searching manner." Two people who were shadowed also walked back part of the way. If we add these responses together (multiple responses were possible) to construct a summative assessment of stress, we find that 49% of the mourners observed ($n = 24$) were not stressed (i.e. there was no mention of the above-mentioned individual indicators); 33% ($n = 16$) had one stress indicator and a group of 18% ($n = 9$) showed two to four signs of stress. If we consider the places where "looks around in a searching manner" was indicated, we find it applies across a broad area, with the following locations listed more than once: K15 (three mentions), then Forum-Platz, Urnenhainplatz, K37, and K43 (with two mentions each).

Finally, as the following table shows, the level of stress observed had at least a moderate influence on the degree to which people adhered to the ideal route. Those who left the route

Figure 2

Stress level and adhering to the path

Clustered Bar Percent of exit-ideal path by stress level
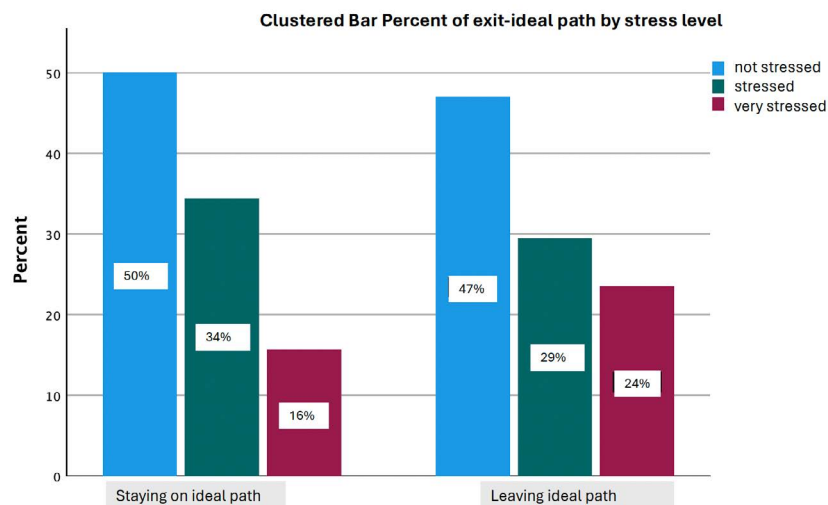
accounted for 24% of the mentions of their being "very stressed" compared to 16% among those who adhered to the path (see Figure 2).

Stress levels and the use of wayfinding aids are circumstances that have to be taken into account when analyzing individual cases of people deviating from the ideal route. We shall examine these in detail in the following section with a view to implementing measures to improve the situation. To this end, the respective locations of the deviations were also photographed from the perspective of the target person.

The comments of the "shadowers" and of the photographer can also be used for a more in-depth analysis against the background of the signage concept.

3.4 Divergences From the Ideal Route Under the Signage Microscope – Assessment and Options for Improving the Signage

Using the photo documentation of the 17 locations of the first divergence from the ideal route, plus the observation comments recorded by the shadowers (see Table 4), the people responsible for the signage examined the extent to which extant or hitherto absent signage elements might have *contributed* to a decision to deviate from the route, and what measures might be considered to rectify this state of affairs.

We should emphasize in advance that individual decisions about which route to take are multicausal and that signage must be understood as a sequence of communication that is not always visible and already has an impact on an individual's path to the site of divergence. These influencing factors—such as one's use of the signage along the route—have already been discussed in section 3.3. The methodology chosen meant it was possible to categorize the 17 cases of deviation from the route by means of precise information about the location along with photos and the observations made by the shadowers. In 13 of the documented cases, the signage team reached the conclusion—based not least on the shadowers' comments—that introducing any new or altered signage elements on the spot would exert a comparatively minimal impact on the decision as to the route to be taken, and that it would be better to embark on the necessary improvements to the chain of communication (providing advance information and advising people to pay attention to the important signage elements along the route and at the entrance) and to general issues at the cemetery (such as avoiding more than one burial taking place at the same time). In the following four cases (each given here with a photo

45

and a map of the route taken), the weighing-up process nevertheless decided in favor of making improvements to signage on site.

With reference to the following divergence, one could consider adding the name of the reference sites to the back of the rectangular columns identifying them in the cemetery (e.g., the "Platz der Erinnerung," the "site of memory" case 1).
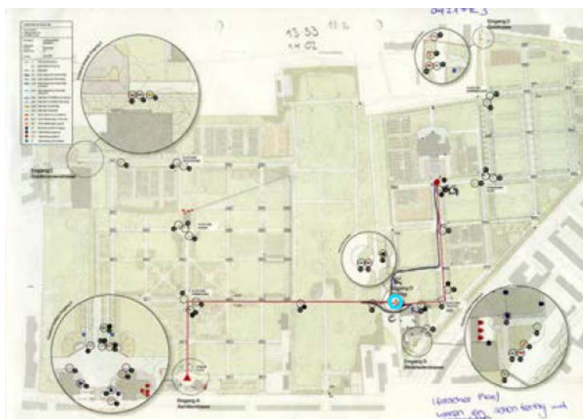
Image 3

Significant Contribution by Signage to Divergent Paths – Case 1
Photo: Nicole Hametner, IDR
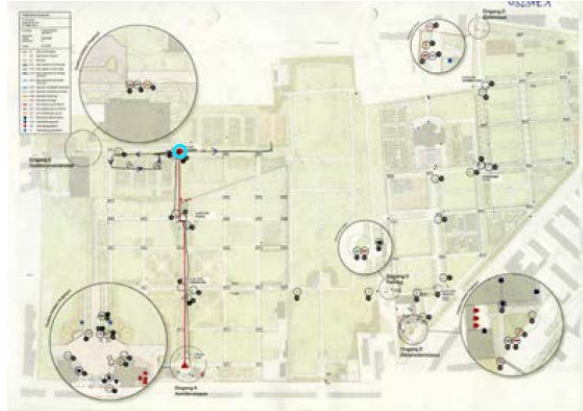
As to case 2, we may assume that the people in question did not see the main column with the overall map of the cemetery and the notice of the burials of the day. So, it would be worth considering also putting information on the back of the column for ease of orientation.

Image 4

Significant Contribution by Signage to Divergent Paths – Case 2
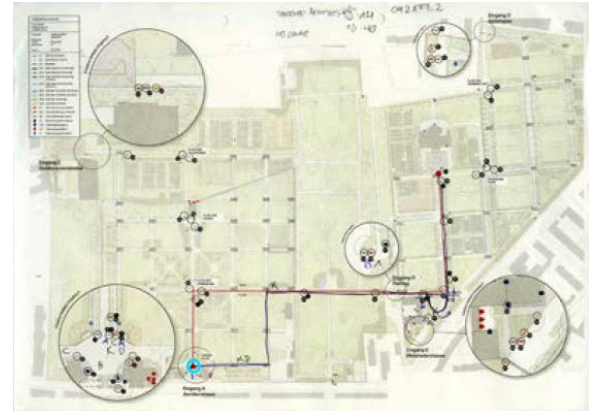*Photo: Nicole Hametner IDR*

In this third case, the observations of the shadowing person suggest it would be wise to consider offering the signs in at least two languages (German/English).

Image 5

Significant Contribution by Signage to Divergent Paths – Case 3
Photo: Nicole Hametner, IDR

In this fourth case, a further detailed analysis ought to consider whether people have relatively often failed to see this column, or whether this is an exceptional case. The photo offers a view through the archway; it is also a place that is perhaps one of the least clearly visible. The situation should be further assessed during an on-site visit. This is a particularly interesting case, as the shadowing method validated doubts discussed already, when the stele was installed: at the time monument protection for parks vetoed the placement of the stele in front of the arch, as initially planned by the signage team. The discussion is now reopened.

Image 6

Significant Contribution by Signage to Divergent Paths – Case 4
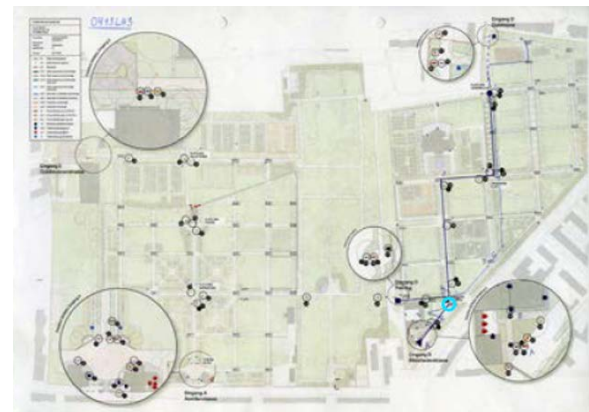
DISCUSSION

The point of departure for the evaluation presented here was the question as to whether the new signage system had largely solved the problem of mourners arriving late. Of the people shadowed, 27% ($n = 13$) arrived too late, though a late arrival at the cemetery itself was the decisive factor in two of those cases. It was also shown that late arrivals occurred more frequently among the 17 people who did not adhere to the ideal route. Our analysis subsequently concentrated on the signage-related factors and the general influencing factors linked to leaving the ideal route.

The degree of attention that people paid to the signage elements—at least as far as we can reliably observe their brief glances at them—leaves a lot to be desired overall. This applies in particular to the orientation boards and the notices at the entrances but also to the use of important signage elements along the ideal route. As far as the orientation boards are concerned, 44% ($n = 14$) of those who kept to the ideal route ignored them, while 65% ($n = 11$) of those who diverged from the route did the same. It was also observed that people paid relatively little attention to the signage elements along the ideal route. Even those elements categorized as "very important" were completely ignored by 41% ($n = 13$) of those who kept to the ideal route, and by 65% ($n = 11$) of those who diverged from it. Nevertheless, the differences between these two groups tend to indicate the signage had a positive effect. Our analysis of the exact location where the 17 divergent people left the ideal route also proved interesting, though "hotspots" at which several people left the route ought to be subject to special further investigation. By using the comments of the observers and photo documentation of the location from the perspective of the target persons, possible improvements to the signage on site have been determined by the authors of the signage concept, along with indications as to how the integrated communication chain might be further optimized.

As far as the general influencing factors are concerned, there was a slight increase in the use of wayfinding aids at the Platz des Trostes ("place of consolation"). *Signs of stress* (looking around as searching for something, appearing confused, etc.) were observed and localized among half (51%) of the shadowed people. Although it is evident

people had difficulty orienting themselves, the existing signage concept, which names different reference sites in the cemetery, makes it easier for people to determine where they are, something confirmed by the fact that those people who deviated from the ideal route were generally able to find their way back easily.

The vast majority ($n = 42$) chose the "correct" *ideal entrance*; only seven people chose the "sub-optimal" entrance that offers a longer route to their destination. Because two from this group deviated from the ideal route, this means that our original assumption is no longer plausible that having a longer route makes it more difficult for people to orient themselves. This result also indicates that the communication chain clearly works well when it comes to designating the entrance to be chosen.

Finally, it was shown that physical impairments (such as the need to wear spectacles) contribute disproportionately to people diverging from the ideal route, though these people pay greater attention to the signage when compared with people without any impairments. Once again, a site-specific investigation would have to be carried out to determine the extent to which visual impairments might have played a role in people diverging from the route at specific locations. The shadowing fieldwork also met with unusual challenges that highlighted further risks and limitations.

The Number and Selection of Funerals

Funerals were suitable for shadowing when the mourners had to gather at the grave and only afterward proceeded to the chapel or crematorium. But if the procedure was reversed, with the relatives of the deceased going first to the chapel or crematorium, then they naturally proceeded to the grave en masse afterwards, which meant that their group was unlikely to get lost.

Selection and Observation Of Target Persons

It often happened that relatives gathered at the entrances, or that the officiating priest received them there. This can be helpful for the mourners, but for us it resulted in fewer cases that we were able to observe than if the mourners had walked to the grave on their own. It was also not easy to distinguish who were mourners and who were visiting other graves or were just using the cemetery

to take a walk in nature. More specifically, observing from a distance implies that the observer sees the target person mostly from the back, making it difficult sometimes to follow the line of sight correctly. Also, in some cases, two burials took place at the same time in two different sectors, or a burial at a grave took place while a funeral service was being held in the chapel in the same sector at the same time. These overlaps were confusing not just for the mourners, but also for our observers when they were selecting a target person.

Logistics

The large scale of the Sihlfeld cemetery meant that one of our observers was following someone while the next person was already coming through the entrance. This meant we were not always able to observe all the mourners.

When evaluating the results we have presented here, it should be noted that we organized our study by extracting just one issue from a comprehensive catalogue of goals for the new signage system: namely, trying to solve the problem of mourners arriving too late. This naturally placed our focus on helping visitors to orient themselves better. The extent to which the other objectives of the signage system have been achieved can only be assessed through further, broad-based studies conducted in the future. The specifications for the Sihlfeld signage system "memorial landscapes" include the following: better links between the cemetery and public and private transport; conveying the feeling that visitors are welcome; providing clear, attractive information; taking current norms into account, and ensuring equality for people with physical impairments.

It should be noted here that the methodological approach of observation generates precise, location-based data on wayfinding in a way that surveys cannot. However, our approach can only *partially* take other general influencing factors into account. For example, we cannot determine the existing level of information possessed by the target people, nor whether or not they might already be familiar with the cemetery or have general wayfinding experience or skills from other contexts (such as going on hikes or negotiating railway stations). This is the only way we can explain why a subgroup is able to find their way successfully, despite paying little or no attention to the signage. Follow-up interviews to combine observation

with self-report have been used in various situations (e.g., wayfinding at the airport; Gimpel, 2021). Yet, in the present context of cemeteries and funerals, it is not an option to ask people returning from the grave for an interview. Some additional information might be collected in future studies, interviewing the relatives to understand how they informed others about the funeral but not the people attending the funeral. A strategy for future research to solve this problem is to work with much larger samples of observation, assuming that in this case the unobserved background information variables are distributed randomly and the wayfinding performance can be assessed independently from these factors. Furthermore, understanding signage theoretically as a communication process would require a detailed exploration of the various stages of information starting with the registration office for funerals.

On the one hand, the relatively small number of observers meant we could not get statistically reliable results. On the other hand, the results presented here have been achieved and documented in detail for individual cases and with regard to location. This detail was made possible by the limited number of cases and by our qualitative method, which when seen in this light highlights the actual advantages of our approach. Our results have opened up opportunities for municipal cemetery managers to investigate specific individual issues *themselves* (e.g. regarding hotspots and the accumulation of observations; reviewing font sizes to suit those who wear spectacles; or analyzing "natural," alternative routes based on the route maps) and to initiate specific optimizations before transferring the model demonstrated in this pilot project to the other Zurich cemeteries.

49

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