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The future sign and its three dimensions

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Abstract

The topic of weak signals has raised its interest especially in Finland in recent years. Weak signals are current oddities, strange issues that are thought to be in key position in anticipating future changes in organizational environments. Scanning for them and using them in scenario work is thought to be successful for looking to the future. However, defining weak signals is problematic, and various authors term the concept differently. The debate about the characteristics of weak signals has been active especially in Finland. The article aims to develop a deeper theoretical understanding of weak signals. For this purpose, a semiotic approach, Peirce's triadic model of sign in particular, is used. The article introduces a new starting point for defining weak signals (signs) by using the novel concept *future sign*, which consists of three dimensions: the signal, the issue and the interpretation.

1. Introduction

Scholars, consultants and organizations have become increasingly interested in *weak signals*. This can be seen from the growing number of texts dealing with the topic (see e.g. Ansoff [1–5], Webb [6], Coffman [7–11], Blanco and Lesca [12], Harris and Zeisler [13], Day and Schoemaker [14]). The discussion has been active in Finland, too (see Metsämuuronen [15], Mannermaa [16–18], Hiltunen [19–23], Kuusi et al. [24], Nikander [25], Moijanen [26], Ilmola and Kuusi [27], Uskali [28], Brummer [29], Kuosa [30], etc.). During the last 2 years, at least two books on the issue have been published in Finnish [31,32], and some individual consultants as well as consulting companies in Finland are paid for working with weak signals. Owing to a wide variety of definitions by researchers and consultants, there is however, confusion about what weak signals actually are. Another challenge to the issue is caused by concepts close to weak signal, such as *emerging issues*, *seeds of change*, *wild cards* and *early warning signals* (see for example: Molitor [33], Dator [34,35], Nikander [25], and Petersen [36]). Some of these terms are even used as synonyms for weak signal (e.g. [16,25]).

The study of weak signals has focused on practical rather than theoretical issues. Outside of Finland, the characteristics of weak signals have been discussed mainly by Coffman [7–11], with other writers focusing more on applying weak signals in organizational environments (e.g. [1–5,12,14]). In Finland, however, some discussion about the characteristics of weak signals has been aroused (e.g. [16,20,24,26]). The discussion started from a paper by Kuusi et al. [24], which was criticized by Moijanen [26]. This useful debate has

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unfortunately remained unheard of by the international audience, since it has been written about only in Finnish. Thus, one aim of the article is to shed light on the Finnish debate about the characteristics of weak signals.

The main contribution of this article is *the triadic model of the future sign*, which is presented here for the first time. This model has been used in order to come up with an answer to the questions and critique raised in discussion about the characteristics of weak signals among Finnish scholars. The triadic model of the future sign is based on Charles Sanders Peirce's triadic model of the sign [37], which I consider to be applicable in its versatility to resolve some obscurity in the weak signal dilemma. As for the future, semiotics, which has only seldom been used in the discipline of futures research, could have much to offer for the discipline.

2. Discussion about weak signals in the literature

As early as 1975, Ansoff, who was among the first people contributing to the field of weak signals, wrote about the issue in order to overcome some problems in strategic planning [1]. Ansoff [3, p. 12] described weak signals as "… warnings (external or internal), events and developments which are still too incomplete to permit an accurate estimation of their impact and/or to determine their full-fledged responses." He [3,5] presented a matrix linking the signal strength and graduate response of a company. He has also contributed to evaluating the signal strength grading it to five categories according to its intensity. Ansoff's views of weak signals have been discussed thoroughly for example by Webb [6] and Nikander [25].

Besides Ansoff, Coffman is another person, whose contribution to the research of weak signals has been remarkable [7–11]. He has examined weak signals connecting them to information theory, cybernetics, complexity and self-organization. Coffman has also put emphasis on the practical aspects of using weak signals in the business environment. Several other authors have also considered the business environment and organizational viewpoints of weak signals (see e.g. van der Heijden [38], Day and Schoemaker [14], Brabandere [39], Blanco and Lesca [12], Lücken et al. [40], Salmon [41], Saul [42], Harris and Zeisler [13], Mendonça et al. [43], Neugarten [44], Mannermaa [16,31], Hiltunen [21,22], Åberg [45] and Ilmola and Kuusi [27]). The problem with the available literature is the variety of the definitions of weak signal. Also, some other terms like early warning signals [25, 46], wild cards [16], seeds of change [47], emerging issues (see Schultz [47], Molitor [33], Dator [34,35], Stevenson [48] and early indicators [36] are used sometimes as synonyms for weak signals. The characteristics of weak signals have not been exposed to thorough discussion in international literature. In Finland, on the other hand, the issue has rather actively been discussed about by Kuusi et al. [24], Moijanen [26], Pitkänen [49], Linturi [50], Uskali [28], to name a few. The discussion reveals the variety and obscurity of the weak signal's definitions, and a more general and universal model of weak signals is called for.

3. Future sign and its dimensions

Because of my work as a researcher of weak signals, I try to spot them while reading through my morning papers. One day there was a news story in a Finnish main newspaper, Helsingin Sanomat, about the fashion clothes shop chain Hennes and Mauritz (H&M). The article was telling that 12 H&M shops have taken second hand clothes for their collection. These clothes are sold under the title "vintage" and they are about the same price as the new ones [51].

This was news to me, and it pushed me to think of the dilemma of the definition of weak signals more thoroughly. In my mind I wanted to label this news story as a weak signal. The only problem in categorizing this piece of news as a weak signal was its visibility. Taking up one-fourth of a page in Helsingin Sanomat, a newspaper daily read by every fifth Finn, the problem in categorizing the piece of news as a weak signal was its high visibility. Being sure that many others too had noticed the story, I would not prefer labelling it as a weak signal. On the other hand, the phenomenon itself was new, since only about 1% of H&M shop[1] had "vintage" clothes for sale.

[1]According to H&M web pages, there exists 1196 stores around the world. (source: http://www.hm.com/corporate/do?action=factsandhistoryviewshortfacts, opened 31 May 2006)

The article was a real wake up call for me that pushed me to try to define the term weak signal more thoroughly. The problematic of the definition of weak signal has led me to search for help from a discipline other than organizational sciences and futures' studies: semiotics. Semiotics, according to Oxford Advanced Learner's Dictionary online, is "the study of signs and symbols and of their meaning and use" [52]. Danesi [53, p. 9] calls semiotics briefly as "a science of signs". Semiotics has so far been utilized only a little in futures studies and especially in the problematics of weak signals (Ruttas-Küttim's [54] article is a good example of using semiotics in future studies). The purpose of this article is to find a more general model of weak signals by using semiotics, especially Peirce's triadic model of a sign [37].

3.1. Triadic model of future sign

The first major contributors in defining a sign in semiotics were Ferdinand de Saussure (1857–1913) and Charles Sanders Peirce (1839–1914). Saussure has offered the 'dyadic' model of a sign. He defines the sign as being composed of the *signifier* (e.g. the form the sign takes) and the *signified* (e.g. the concept it represents). According to Saussure, the sign is a whole that results from the association of the signifier and the signified [55].

Peirce, on the other hand, has provided the triadic model of the sign (see Fig. 1), which consists of the *representamen*, the *interpretant* and the *object*. The representamen stands for the form, which the sign takes (not necessarily material); the interpretant is not equivalent to the interpreter but rather the sense made of the sign; and the object is to which the sign refers [57].

In order to deepen understanding of weak signals, this article introduces the concept *future sign*, which is based on semiotic theories, especially Peirce's triadic model of the sign. Semiotics is seen applicable for use in future studies, especially with weak sign(al)s, because semiotics is focused on understanding signs. As weak sign(al)s are signs which may foretell future events, the use of semiotics is justified here.

The future sign is designed to function as a general model that can be used to understand the concept weak sign(al) and to estimate its characteristics. The future sign can be divided into three dimensions according to Peirce's sign: *the object*, *the representamen* and *the interpretant*. In the case of future signs, these dimensions have the following meanings:

- *The object* refers to an (emerging) issue.
- *The representamen* is the concrete form the sign takes. I will call this *signal*, because it is usually sent by someone (note: not in every case, though). In the case of future signs, signals can take the form of a news article, a rumour, a photo, a story in TV news, an image, etc. The signal is in connection with the *issue*.
- *The interpretant* is a sense made of the future potentiality of the sign. This means the clarity to an interpreter of the sign to make assumptions of future events based on the sign. Contexts are included in this dimension, because interpreters make their conclusions about the signs in their own context.

The model of the triadic future sign is presented in Fig. 2. In this figure, the case of H&M, discussed in the beginning of the Section 3, is used as an example.

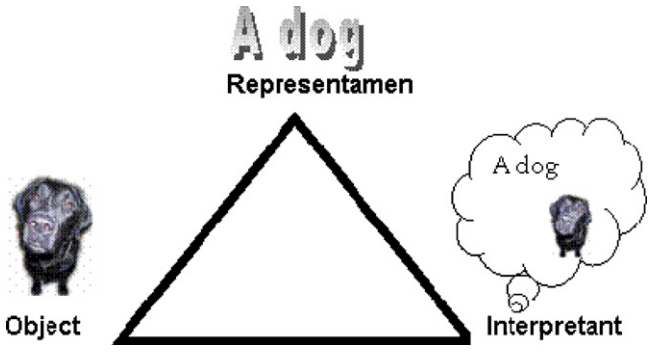

Fig. 1. The "Peircean" sign [70, p. 21, modified].

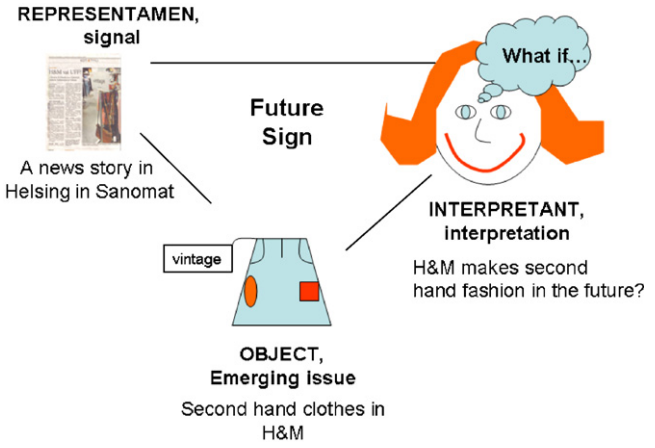

Fig. 2. The model of the future sign adapted from Peirce's triadic model of a sign (case Hennes and Mauritz).

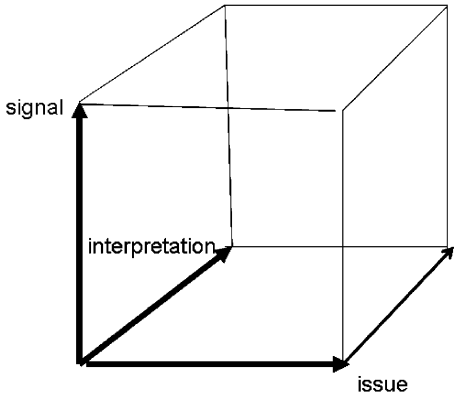

Fig. 3. Three dimensions of the future sign: signal, interpretation and issue.

For further examination of dynamic characteristics of the future sign in particular, I find it worthwhile to describe the future sign in three-dimensional space too (see Fig. 3). In this figure, the axes (i.e. the dimensions of the future sign) are called *the signal*, *the issue* and *the interpretation*. The units of these dimensions are the following:

The signal: the number and/or visibility of signals.

The issue: for example, the number of events. A variety of other units that describe the diffusion of the phenomenon are also possible (e.g. the percentage of net sales or the percentage of internal sales, the amount of employees abroad).

The interpretation: the receiver's understanding of the future sign's meaning (an organizational point of view of this can be the importance of the sign for an organization in the future).

Weak signals are hereafter referred to as *weak signs* or *weak future signs*. The intensity of the sign will be discussed more thoroughly in Sections 4.4 and 4.4.1.

3.2. Semiotic and epistemological discussion about the future sign

Although semiotics, more specifically Peirce's model of the sign, is applied in this article, it must be emphasized that the author's experience is more in the field of future studies. Despite that, I see that it might be possible to use semiotics in other future's fields, like in analysing the images of future. However, using semiotics is not unambiguous, and semiotics has faced some critique. It is considered to be "relatively loosely defined critical practise, rather than a unified, full-fledged analytical method or theory" [56]. It is also criticized

for being "imperialistic" because of trespassing on almost every academic discipline, and for being too abstract and arid. Also, the focusing of semiotic study mainly on synchronic analysis (static) instead of diachronic analysis (dynamic) is held as its disadvantage [58]. Some of the critique also fits to the model of the future sign, which is based on a semiotic theory. To name one, the future sign's abstractiveness is its disadvantage. However, the purpose of the model is in the first place to understand important dimensions of signs from the future's perspective. For that purpose, the future sign serves well.

The model of the future sign is based on realism, which my engineering background supports (see: Walker's [57] writing about realism and physical science). Thus, from the epistemological point of view, the future sign could be connected closely to realism, which is defined in the following way: "In epistemology realism represents the theory that particular things exist independently of our perception. This position is in direct contrast to the theory of idealism, which holds that reality exists only in the mind" [58]. Realistic view is occupied by Platonists in an 'extreme' form [59, p. 408]. Also, Peirce called himself a realist [60, p. 194], although he is related to pragmatism too [61,62]. As a realist, I believe that there is an objective reality (discussed further in Section 4.3). Reality exists even if there was nobody making notes of it. Tarasti [61] connects realistic and idealistic world views to semiotics by talking about exogenic signs that belong to empirical reality, which is observable to anyone, and endogenic signs that belong to subject's inner reality. However, it appears that it is not always easy to make a difference between those two kinds of signs.

On the other hand, in regard to future, interpretating reality is important for anticipating the forthcoming challenges. Besides, in many cases, the receiver may have the opportunity to affect the future. Thus, constructivist view can also been seen applicable to the theory of the future sign. According to Mir and Watson: "constructivism brings to the foreground that strategy researchers are actors rather than mere information processors and reactors" [62]. In the case of the future sign, the term *strategy researchers* in Mir and Watson's quote can be replaced by the term *receiver of the sign*. However, it is important to notice that the receiver of the sign is not always capable of acting on the sign, if the future is, in the words of De Jouvenel [63], dominating.

The third epistemological view that is possible in the case of the future sign is pragmatism. According to Newall, pragmatism in epistemology means "considering something knowledge if it is useful to some end" [64]. Pragmatist view is occupied when the receiver is estimating the importance of the issues for him/her or the organization. As can be seen, a single epistemological view cannot be selected for the future sign. As Patton [65, p. 71] puts it: "Operating narrowly within any singular paradigm can be quite limiting".

4. Answering the critique of weak signal's definition by the model of the future sign

As mentioned above, the obscurity and variety of characteristics of weak signals have raised a debate among researchers in Finland. The problem of defining the characteristics of weak signals was first introduced in the Delphi panel of future researches in Finland coordinated by Kuusi et al. [24]. Two conflicting definitions for weak signals were put forward in the Delphi panel according to preferences of the characteristics of weak signals, which in this study were referred to as "weak future signals". These definitions are called "the most supported weak future signals" formed from the characteristics most preferred by the participants, and "an anti-definition of weak signals" that was formed from the characteristics the least preferred by the participants. The definitions are the following:

The most supported weak future signal:

> A weak future signal is an early warning of change, which typically becomes stronger by combining with other signals. The significance of a weak future signal is determined by the objectives of its recipient, and finding it typically requires systematic searching. A weak future signal requires: (i) support, (ii) critical mass, (iii) growth of its influence space, and dedicated actors, i.e. 'the champions', in order to become a strong future signal, or to prevent itself from becoming a strong negative signal. A weak future signal is usually recognised by pioneers or special groups not by acknowledged experts.

An 'anti-definition' of weak future signal:

> It is crucial for the credibility of a weak future signal that it comes from acknowledged experts, and those experts are also most able to recognise weak signals. A weak future signal is not dependent on an interpreter, i.e.

it is an objective phenomenon. The weak future signal anticipates processes that have radical impacts on future and it typically includes a sign, which needs to be seized immediately. An important weak future signal strengthens by itself over time, since it is an early warning of a general rising trend [24].

Moijanen [26] criticized the lack of consistency in the definition of weak signals, especially referring mainly to the Delphi study by Kuusi et al. [24]. She commented that the only characteristic of a weak signal commonly accepted among researchers is that it is the first sign of a possible change in the future. According to Moijanen, there is confusion about the following points and questions of the term weak signal: its relationship to the transition phenomenon, its duration, its objectivity vs. subjectivity, and who the interpreters of weak signals are. There also remain the questions: who are the receivers, observers and analysers of weak signals and who analyses and draws the conclusions of them. On the basis of (mainly Finnish) literature on weak signals Moijanen examined, she concludes that the researchers have defined weak signals in three ways: In the broadest sense of the term, several simultaneously affecting phenomena and consequences significant for understanding the general objectives of future studies are, in theory, included in the weak signal. Defined more narrowly, the weak signal is in itself a changing phenomenon. In the strictest definition, the weak signal is a sign that preindicates future changes. In Table 1, I have summarized the essential questions Moijanen [26] found problematic for defining the term *weak signal*. I consider these questions relevant for this article.[2]

Pitkänen [49], on the other hand, strongly criticizes the use of the term weak signal in future studies. Discussing weak signals as *signals* is in his view incorrect, as signals require a sender. In the case of weak signals the sender is missing. According to Pitkänen, linking the theory of weak signals to mathematical communication theory developed in the late 1940s by Claude Shannon, Norbert Weiner and Warren Weaver is incorrect. He also criticizes using cosmic radiation as an analogy for weak signals. Unlike radio astronomers who can predict, e.g., planetary movements on the basis of theories and observations of cosmic radiation, futurists have no theoretical laws for predicting the future. Nevertheless, Pitkänen distinguishes two kinds of weak signals: subjective and objective. He sheds a light on the possibility of developing a theory of objective signal, but also, at the same time, denies the very possibility as a paradox. He argues that subjective signals are even more problematic and calls for more detailed theoretical discussions on weak signals [49].

In her analysis of Kuusi et al.'s [24] Delphi panel, Moijanen [26] shows the inconsistencies in the definition of the weak signal. The three-dimensional model of the future sign is developed to answer Moijanen's and Pitkänen's critique. Pitkänen's critique is mainly answered by shifting the discussion from the signals to signs, the theory of which can be utilized in future studies, too. The aim of the following sections is to test the model of the future sign against the critical points in defining weak signals listed by Moijanen in Table 1 [26].

4.1. Weak sign and its relation to transition phenomena

One of the indeterminacies of the characteristics of weak signals according to Moijanen is the relation of weak signals to the transition phenomena [26]. There are the following three views of that: (1) the weak signal is the same as the transition phenomena that will weaken or strengthen in the future, (2) the weak signal itself triggers change, and (3) the weak signal is a sign of change in the future. The triadic model of the future sign clarifies the confrontation of the claims numbers 1 and 3: the model shows that the sign itself includes either the phenomenon or the issue (or the object, as Peirce labels this dimension) and the signal (the representamen, as Peirce marks it). However, the triadic model of the future sign does not take a stand in regard to the effects of the sign, which in this case concern the sign's ability to trigger further changes. Importantly, it does not exclude the possible ability either.

4.2. Duration of weak sign

Moijanen [26] also discusses the signal's duration. The statements on the issue can be divided into two categories: (1) the weak signal only lasts for a moment, or (2) the weak signal lasts longer. The underlying assumption in the two categories is that the weak signal is either the phenomenon or just the sign of change.

[2]The unclear issues (properties of weak signals) are from the titles in the article by Moijanen, except for number 4b, which on the other hand, exists in the text. It is seen to be relevant for this article.

Table 1
Differences in the definition of the term weak signal by Moijanen [26]

	Property of weak signal	Different views
1.	Transition phenomenon	• A weak signal is the same as the transition phenomenon, that is going to get stronger or weaker in the future • A phenomenon interpreted as a weak signal is triggering changes • A weak signal is a sign of changes in the future (a consequence of something that already exists)
2.	Duration of a weak signal	Weak signals lasts only a moment: (1) Weak signals seen as a sign that lasts for a moment, but a phenomenon behind it lasts longer OR (2) Weak signals are phenomena that last for a short time (wild cards?) Weak signal lasts longer: (1) A weak signal is a cause for a change in the future (2) A weak signal is a phenomenon itself
3.	Objectivity/subjectivity of a signal	• Weak signals are independent of their receiver. ''Weak signals float in the phenomena space and wait for someone to find them'' • A weak signal does not exist without a receiver (and the interpretation of the receiver) of it
4.	Different ways to interpret the same signal	• Interpretation adds subjectivity to the signal-even though it is thought to be objective. The interpretation of a same signal can be different from the point of view of the different receivers of the signal
4b.	Strengthening of a weak signal	• The weak signal (as a sign) itself is strengthening • A phenomenon, interpreted as weak signal, is strengthening • A phenomenon whose change is in question, is strengthening
5.	Receivers/observers/ analysts of the signal	• Differences in the opinion in who is the receiver or observer of the signal: experts, special groups etc. • Difficulties in defining the concept expert
6.	Who analyses and draws the conclusions?	• Who is drawing the conclusions on the cause–effect relationship? • Who is defining the credibility and significance of weak signal? • Who is the one that can affect the decisions concerning the future?

In the triadic model of the future sign, the signs consisting of three dimensions entails that its duration is also connected to each dimension. The duration of the weak sign is thus the time from the sign's first appearance to its becoming a strong sign or, alternatively, vanishing. In the future sign cube (Fig. 3) we can measure the time of the sign's turning from weak to strong, or alternatively to vanishing. However, it is problematic to draw a line between a weak and a strong sign in practice.

When examining the three dimensions of the future sign separately, we can notice that the duration of each dimension is different. The duration of a *signal* may only be a moment (a TV news item, a gesture, etc.), whereas another signal might not vanish as quickly, but continue existing, even though less visibly. Good examples of this are newspaper articles: they do not cease to exist once their lifecycle in the newsstand has come to an end, but, to the delight of researchers, survive in archives and libraries. Also, the Internet has changed the filing systems completely. Even the ''old news'' is now easily available for everybody.

The other dimension*, the issue*, and its unit, the event, can last for a short or a long period. When one event stops, another event of the same phenomenon can begin. Many events can exist side by side, too. The duration of the *interpretation* dimension is the most confusing of the three. In my view, the duration in this case is

extremely difficult to determinate. The duration of a weak sign is thus mainly dominated by the objective dimension of the future sign. The objective and subjective dimensions are discussed more thoroughly in the next section.

4.3. Objectivity and subjectivity of sign

The discussion about the objectivity and subjectivity of weak signals has revolved around the question whether or not one signal can appear weak for one person and strong for another. The fact that weak signals are dependent on the context in which they are interpreted seems to support that it can. In practice, this kind of thinking proposes that in one context the signal can be weak and strong in another. The counterargument for this is that weak signals are purely objective (see e.g. Linturi [50]) and, in theory, possible for everybody to notice.

The three-dimensional model of the future sign clarifies the problematics of objectivity and subjectivity of a sign(al). I argue that there is an objective, two-dimensional aspect in the sign consisting of the axes *signal* and *issue*. The objectivity of these dimensions comes from the fact that the number of events and signals are countable and, in theory, visible to everybody. The only subjective dimension in the three-dimensional sign is the *interpretation* of the sign, which can be thought to include the context aspect. Thus interpretation is subjective, related to the receiver and interpreter of the sign (see Fig. 4).

4.4. Intensity and strengthening of the sign

Another challenging issue in the problematics of weak signals has been the strengthening of a sign(al). This issue was touched on in Section 4.2 dealing with the sign's duration. The triadic model of a sign enables one to look at the sign's strengthening as changes in the coordinates in the three-dimensional space. A sign strengthens when there is a rise in at least one of the dimensions (signal, issue and interpretation). The number and visibility of signals mark the axis of the *signal*. To simplify this: if there are only a couple of small news stories about an issue in papers, the value of a signal is graded low. Oppositely, the signal is graded high, when the signal's number/visibility is high. In the case of the *issue* dimension, the number of events is the unit of this axis. This is similar to emerging of issues from a single event to a phenomenon, which have been discussed by Molitor [33]. Emerging issues have also been discussed by, e.g. Reinhardt [66], Schultz [47] and Dator [34,35].

The third dimension, the *interpretation* of the sign is strengthening when it becomes more obvious to the receiver what the sign could mean for the future. The strengthening process of the sign is described in Fig. 5. To summarize the previous in practice: in the purest form of a weak sign, there are only few concrete signals of it and only one or two events, and it is unclear for the receiver what this could mean for the future. On the other hand, with a strong sign, there are many concrete, visible signals, the number of the issues is extensive and the interpretation of the meaning of the sign for the future is clear.

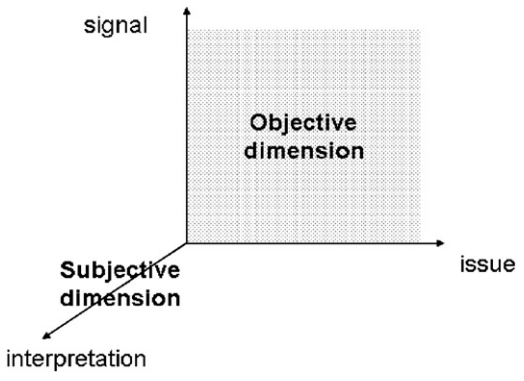

Fig. 4. Objective and subjective dimensions of the future sign.

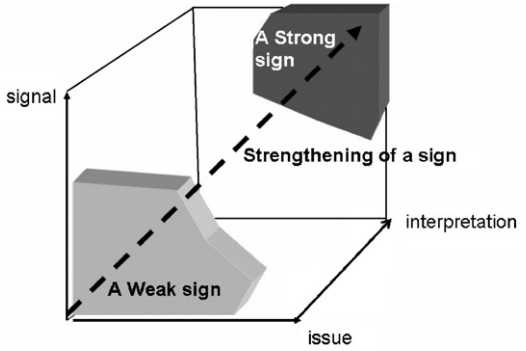

Fig. 5. Strengthening of the future sign. The dashed line arrow shows the direction of the sign's strengthening in three-dimensional space. Areas that represent clear examples of weak and strong signs are marked in the picture, too.

4.4.1. Examples of weak and strong signs

The question remains: was the news story of H&M a weak sign? By using the model presented in this paper we may roughly estimate the intensity of the sign. In this case, the *signal* itself (the article) was quite visible, being in the main newspaper in Finland. From the global point of view, the news appearing in the main newspaper of Finland is of course a minor fact. It is, however, beyond my knowledge how much this issue has been reported in media of other countries. (The problem of the limits of receiver's viewpoints is discussed in the Section 4.5.) The *issue* itself, H&M having second hand clothes for sale in its shops, is positioned low in the issue axis, as it is only 1% of H&M shops that do so. The *interpretation* of this sign from the perspective of future purposes is unclear to me. Does it mean that H&M will have second hand clothes for sale in all of its shops? More generally, will other shop chains start to sell second hand products next to new ones? Is this a start of trend that recycling will be taken even more seriously in consumer businesses? This is unclear to me, so the level of interpretation is low. I have marked a star in the coordinates in the approximate place according to the rates of the axis. It appears that the case of H&M selling vintage clothes could be called a weak sign, since the sign is relatively close to origin of the three-dimensional model of the future sign (see Fig. 6).

The internationalization of Nokia, which was originally a Finnish company, provides an example of a strong sign. Nokia has many factories and offices abroad and over the 50% of the employees are working outside of Finland.[3] Thus, the *issue* level is high. Also, there are many signals of the internationalization tendency of Nokia, for example, in the form of articles in business papers and newspapers. Consequently, the *signal* level is high. For an interpreter, like me, it is clear to make the conclusion that Nokia will continue to be a global company in the future, too (*interpretation* level is graded high). The three-dimensional sign of the internationalizing of Nokia is presented in Fig. 6.

4.5. People dealing with weak signs

In Moijanen's [26] article, there is debate about who the receivers, observers and analysts of the weak signal are. Also, Moijanen presents the question of who draws the conclusions about a weak signal, especially its cause–effect relationship, credibility and significance. Another question is who are the ones that can affect the decisions concerning the future.

With the triadic model of the future sign there is an objective dimension that is, in theory, visible to all. However, because of the surveillance, mentality and power filters mentioned by Ansoff [4] as well as other obstacles discussed by Webb [6, pp. 12–14], all available information is not observed by the receiver (see Fig. 7).

In any case, the more existing objective information is received, the easier it is to make an interpretation of it. There are, in my opinion, particular groups of people who have better chances of getting a clearer view of

[3]Data based on e-mail discussion with Riitta Mård, Communications Manager at Nokia, 19 June 2006.

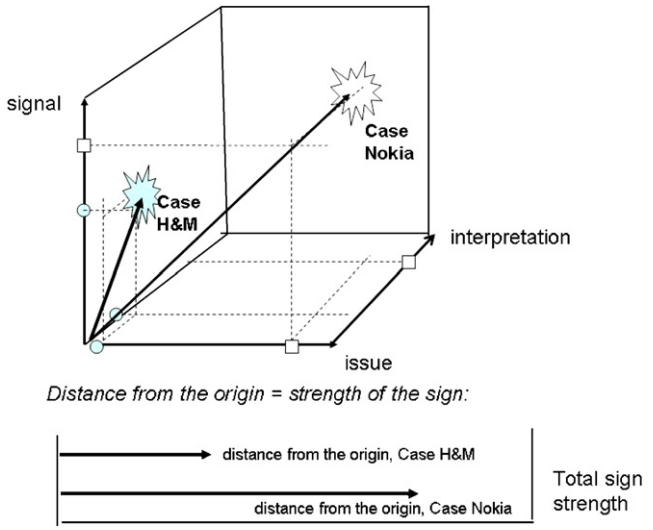

Fig. 6. Strength of the signs: H&M selling second hand clothes and Nokia becoming a global company.

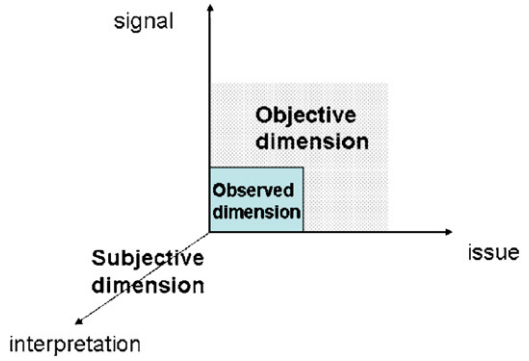

Fig. 7. The objective dimension and the observed part of the objective dimension.

the future signs. Experts within their disciplines have the basic knowledge of what are the newest forms of developments in their fields (i.e. they cover the objective dimension of a sign better). It is not obvious that making an interpretation of a sign is any easier for them, however. Fortunately, the amount of information received from the objective dimension can be widened. This is done by systematically scanning the environment from sources that report on the emerging issues in their early stages. For example, Molitor [33], Choo [67] and Reinhardt [66] list these sources. Day and Schoemaker [14] also talk about the importance of scanning the periphery for weak signals. Thus, people who actively follow the changes in the environment can observe the objective dimension of the future signs better. Respectively, people who are open-minded and future-oriented can interpret the subjective dimension of the sign and its implications for the future more easily.

5. Two types of weak signs

In my previous works I have divided the weak sign (referred to as weak signals in the previous work) into two categories based on the existing literature on the subject. These categories are named (1) *early information* and (2) *first symptoms* [20,22]. In *early information*, the number of signals or the visibility of signals is small. Likewise, the number of events (issues) is small, too. The previous facts make the interpretation of the sign

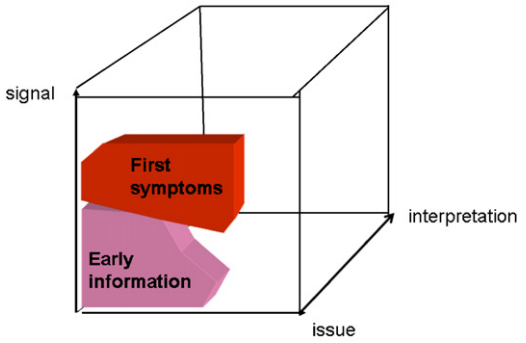

Fig. 8. Two different kinds of weak signs: first symptoms and early information.

difficult, which, in turn, makes the sign weak. Some examples of this type of weak sign are new innovations or inventions.

The other category is called *first symptoms*. In this case, the signals of the event are numerous as well as visible, but we have trouble interpreting the sign. An example of this might be a change in what we have been accustomed to, like a change in somebody's behaviour. The change itself is recognizable, but for us it is not necessarily clear what it means for the future. The differences of these two types of weak signs are presented in Fig. 8.

As an example of these two different kinds of weak signs I have often presented two news articles that include discussion about famous women and their assumed pregnancy. The story of Princess Stephanie and her suspected pregnancy in a tabloid in 2001 [68] is an example of early information type of the weak sign. In the article, the journalist intimated that her belly has become bigger. The rumours of possible pregnancy began to spread. When considering the dimensions of the future sign, the issue itself, i.e., the growing embryo indicated by the size of a belly was still relatively small and hard to detect. Had the princess been pregnant, the size of her belly would have increased notably, which in this case would have been the *issue*. Furthermore, the level of other two dimensions in the coordinates would be low; there were only some signals about the issue available and the interpretation of the sign was not clear enough at that stage. In the three-dimensional model (Fig. 8), this sign is placed in the area of *early information*.

In another article from 2000, journalists suspected Erja Häkkinen, the wife of the famous Formula 1 driver Mika Häkkinen, of being pregnant [69]. The journalist came to that conclusion because: "…Four weeks ago Erja stopped smoking and drinking, and did not even drink to celebrate Häkkinen's victory in Spain. She was seen in a restaurant on Thursday at the Nürburgring eating a salad. Apparently she generally has a far larger appetite…" In this case, the signals (not drinking and smoking) were there more openly visible to a wider public, i.e. the *signal* level is higher. On the other hand, the *issue* itself (a growing embryo, which a growing belly is indicating), was not seen at all. Also, it was not easy to interpret the signals (not drinking and smoking) with great confidence. Thus this sign is located in the area of *first symptoms* type of weak signs in Fig. 8.

6. The future sign's usefulness and its challenges

I have presented in this paper the triadic model of the future sign to answer better the critique of the diverse definitions of weak signals some researchers have raised [26,49]. I have partly abandoned the term signal because of its problematic nature, and rather replaced it with the term (future) sign. A sign is a central definition in the field of semiotics. From now on, I prefer to name weak signals as weak future signs, the weakness of which can be determined with the three dimensions of the future sign. Of course, because of the abstract nature of the future sign's dimensions, there is no accurate way to measure the strength of a sign. Nor is the model's purpose to give any accurate measures of the sign's strength. Instead, it aims to combine the three key dimensions (signal, issue and interpretation) in the definition of the future sign. Rather than being either a concrete signal or a particular event, the future sign is both of them; furthermore, it adds a dimension of interpretation in it as well.

Although the future sign is aimed to be a theoretical frame for understanding weak sign(al)s, it also has practical value for understanding the changes from the future perspective. In particular, it clarifies the difference between what is really happening (issue) and what its information value (signal) is. In many cases, some emerging issues capture the interest of the media and thus make us easily overvalue the possibilities of emerging issues. A classical example of these kinds of occasions is the overvaluing of company share prices. Media may praise a company even if its real condition was not that good and a closer look at the company's important economic figures could reveal its true condition. Thus, the future sign gives an opportunity to estimate future changes more objectively by combining the three dimensions.

The triadic model of the future sign presented in this paper is not inclusive. This model is indeed a "first draft" in an effort to understand the concepts *future sign* and *weak sign* (before: weak signals) in general. It attempts to erase some of the obscurity of the definition of weak signals, but certainly it will need further elaboration by researchers.

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