

## **THE ROAD AS A MASS MEDIUM – A DIFFERENT APPROACH TO ROAD SAFETY**

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### **ABSTRACT: THE ROAD AS A MASS MEDIUM – A DIFFERENT APPROACH TO ROAD SAFETY**

Could a too limited comprehension of what a road system truly is explain why many users were misled and thus failed on the newly opened Euroway 18 in Norway in 2001?

The “instrumental” understanding of the road as infrastructure has long been dominant. A holistic, more “communicative” view on complex road systems is needed.

In 2005 a Norwegian study introduced a completely new understanding of the road as a mass medium. The model found strong support in recognized media philosophy and communications theory.

A scientifically controlled interview with traffic sign experts confirmed that the competence to handle complex road communications problems is incomplete.

Research data proved that:

- Out of 62 risks detected in 4 roundabouts, 46 problems had a “communicative nature” - only 16 an “instrumental”.
- Sign experts (100 %) admitted that communications skills are excluded in their education – but strongly needed.
- A dilemma exists: Sign experts cling to an instrumental understanding (>80%) but admit that up to 90 % of severe safety problems have a communicative nature.

Recognizing the road as a mass medium thus opens new doors for road safety work.

#### **1. AN EXCITING QUESTION – NEW COMPREHENSION**

Does a somehow narrow minded understanding of what a road system truly is explain why several road users were lead astray in wrong directions and at too high speeds on the newly opened Euroway 18 in Norway in 2001? Didn't the road speak clearly enough to them? The question is exciting – and has been scientifically analyzed and clarified in a Norwegian master diploma study in social planning. Within the answer there's built a fundamentally new ontological and epistemological understanding of the road as a phenomenon. The study supplements the traditional “instrumental” comprehension of the road as a physical object: as infrastructure. It acknowledges that the road has characteristic “communicative” qualities and thus must be understood and operated like a communications system.

#### **2. INSTRUMENTAL LIMITATIONS – COMMUNICATIVE EXTENSIONS**

Does a film audience need to attend a course in advance to be able to decipher the audiovisual codex of a new motion picture? No, it's the film editor who scrutinizes the audience to understand their codes and thereafter communicates through the film medium

on the viewer's frequency. According to recognized communications theories and practice. communicating user-oriented on the receivers' premises improves intelligibility, However the recipe for teaching people traffic safety and promoting safe actions apparently often follows the quite opposite communications principle: It's the road users who to a great extent have to adapt to experts' solutions. Maybe weaknesses in this way of communicating can explain much of the unintended, hazardous traffic behaviour?

The Norwegian Public Roads Administration (NPRA), similar to road authorities in other countries, has at its disposal large amounts of data about the road and traffic system, its stakeholders, operators and users. This knowledge however, is by far instrumental and moreover fragmented. An updated, holistic view on how the road truly functions is needed in order to handle the "multidimensional complexity" that modern roads represent. "Instrumental" understanding must be supplemented by "communicative" insight into how the road system actually expresses itself towards the users.

The master diploma study "The Road as a Mass Medium – a different approach to road safety" analyzes scientifically both communications theory and practical road solutions. The study looks resolutely at NPRA's attitudes and practice when it comes to signing and signs, by interviewing professional signers and through field examinations of intersections, roundabouts and roads. To capture and sort out how to approach the problems connected to road safety – the study clears the ground for establishing a completely new model of understanding. It launches the bold thesis that the road can be looked upon as a mass medium, then critically and methodically analyses the thesis and scientifically substantiates it. The new way of thinking opens the door for road and traffic planners to take into use quite new and untraditional tools in their work for improved road safety.

The treatise is anchored professionally and academically to social planning. It has, in accordance to this branch of knowledge, a cross border, broad and open approach to the field of interest. It doesn't reject existing comprehension, but supplements it with new understanding.

In the following I will account for this study, which I completed in the summer of 2005.

### **3. TRUE COMMUNICATION – BASIS FOR ROAD AND TRAFFIC SAFETY**

Precisely because the study represents an untraditional way of understanding the traffic safety problems, it puts emphasis on discussing very thoroughly whether or not the thesis about the road as a mass medium is sustainable. Through critical, methodical reasoning the thesis establishes and is grounded on a scientific platform. The connection between the issues "truth" and "safety" is detected and underlined. A basic hypothesis is that so called random incidents probably don't always occur involuntarily, but can be conditionally connected to how people relate to reality. A fundamental question then is whether or not our understanding and handling of reality is based on a true or a false version?

#### **3.1 Truth and safety: phenomenons and notions in philosophy, science, daily life**

Truth, like the term is used in theology, philosophy and literature from the ancient times and up to our own time, opens existential perspectives. Great thinkers and poets have showed that one needs to explore deep depths in search for the meaning of the word. Augustin and Thomas Aquinas compare truth to belief, science and knowledge" [1]. Socrates and Plato both discuss whether or not there is an objective truth at all. Different sciences have defined throughout time changing criteria for what can be considered as

true knowledge, and thus modify the norms for interpreting reality ” [2]. Ibsen’s Peer Gynt weaves the meaning of the word together with the truth as a phenomenon, switching between dream and reality” [3]. In everyday life we articulate the truth imprecisely and therefore – maybe – untrue?

Safety also has an existential framework. Ultimately it’s all about life or death. Quite a few philosophers have stated that there are some basic truths, containing a form of security and safety [2]. The philosopher Nelson Goodman says that “safety” together with “strength” and “simplicity” are fundamental for distilling true hypothesis in research [2: 63]. Looking at safety as a field of risk prevention the term, “The safety space”, is often used today [4]. Many claim that to act to achieve safety effects is the most important approach for both individuals and society [5]. In planning, safety is measured up against the constitutional power and communicative rationality [6], [7].

Most people see safety through prosaic glasses and are basically more concerned with acting safely, than philosophizing about safety.

### 3.2 Renewed understanding of truth and safety within the field of road safety and NPRA

By all means: The study’s errand is not to philosophically fully comprehend “truth” and “safety”. Primarily the goal was to sort out relations between the two within a “traffical” context. Combined they contribute to sustainable, professional changes.

The NPRA’s new Zero Vision [8] directly reflects a change in what has been - and now is considered to be – road safety truths. In-house in NPRA road safety is described and characterized by the use of statistics and technical terms and standards [15]. The Zero Vision has added a new philosophy or ambition [9]. Risk management is recently introduced as a more relevant field of competence and there’s a strong bid for road safety as a professional responsibility [10]. In other words: The understanding of how truth and safety influence each other has been strengthened during the past years’ road safety work.

### 3.3 The “traffical truth” – basic supposition for safe behaviour in traffic

What we have seen so far is that there exists a connection between what can be sensed and experienced on the one hand and the idea of truth itself on the other. In other words truth needs to be related to both an abstract and physical dimension. This relationship is called the correspondence criteria for truth [11: 166].

The Norwegian Department of Transportation raises the question whether a public or an individual transportation strategy is the best way to secure safety for road users. How far should the individual responsibility as opposed to the public responsibility reach?

Scientifically and philosophically reality is understood and defined on four levels: The ontological, which comprises what actually exists; the epistemological, which covers the part we can produce know-how about; the phenomenological, which is our projected and pictured version of the world; and the hermeneutical, which has to do with how reality is communicated and interpreted (See Fig. 01).

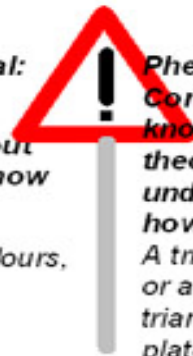
Fig. 01

## A sign is a sign is a sign is a sign is a ...

**Ontological:**  
**What really is:**  
*Mass,  
 substance, form  
 ...*



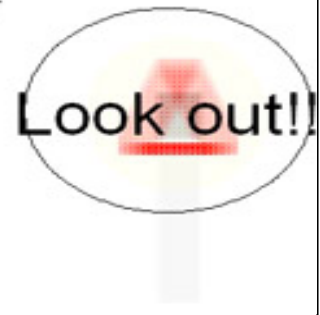
**Epistemological:**  
**Recognizable,  
 knowledge about  
 what we can know**  
*Materials,  
 composition, colours,  
 ...*



**Phenomenological:**  
**Conscious  
 knowledge -  
 theoretical  
 understanding of  
 how reality appears;**  
*A triangle on a pole –  
 or a pole with a  
 triangle on top, Red  
 plate with white mid-  
 area or white plate  
 with red frame...*



**Hermeneutical:**  
**A warning**  
*The sign is a  
 medium for the  
 message>> "The  
 medium is the  
 message"...*



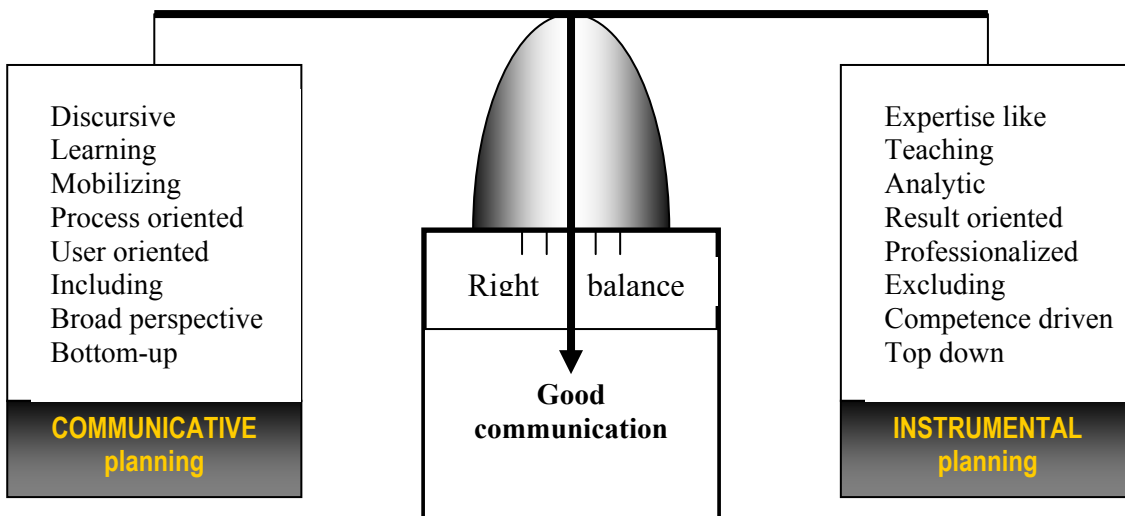
To achieve safe actions the road users need to base their skills and behaviour on ontological information; on true facts. It is, therefore, necessary to understand the different dimensions of truth, in order to be able to extract the most correct and reliable facts on a practical level. True information constitutes the basis for safe actions. On the contrary a false understanding of what is true often leads to and produces: "an *incorrect action* [...] based upon an inaccurate or inappropriate assessment of associated risks." [4]. In traffic the consequences can be fatal and brutally unjust. Incorrect actions yearly result in about 300 fatalities and 12 000 injured people on Norwegian roads [13]. In the EU the similar numbers are 42 000 killed and 3.5 million injuries [30].

### 3.4 The "traffical" truth – "instrumental" or "communicative" reality?

The answer to the question: what then are shared traffic truths? isn't simple. "The truth never appears plain", states the media analyst Neil Postman, and adds: "Truth is a cultural prejudice" [14]. Truth can be discussed and stretched. In traffic the elasticity is pressed even further.

In the study the planning terms "communicative" and "instrumental" are operationalized and used to sort out how the road speaks to its users. All findings are discussed, evaluated and grouped within this dichotomy. And by all means: Communicative planning does not make instrumental planning superfluous. It's when the two are well balanced the communication process reaches its qualitative peak (Fig 02).

Fig. 02: Good balance between communicative and instrumental planning is important.



The traffic road design and landscape design signal a message about what kind of road you're on and the quality of the road. Road design, road marking, signs and signing contribute to a complete communications solution. Transferred to the field of road safety and especially signs and signing, the study concludes a communicative solution to be "the combination of planning and necessary steps taken that based on the users premises answer any "traffical" question the user might have". By an instrumental solution the study means more "technical; by the book solutions".

### 3.5 Truth, safety and "the multidimensional complexity"

It's essential to humbly realise that planning and constructing roads and developing safe transport solutions is a very complex exercise. A countless number of possibilities influence the final result, which constitutes a "multidimensional complexity". Starting points and terms can change during the process. So, then, if it's true that a road is safe in 1994, then maybe the truth isn't valid any longer in 2007, if the traffic density in the mean time has risen beyond estimates and thus changed the character of the transportation requirements. For example the traffic in Norway's Southern region, district of Vestfold, increased by 40 % and specifically on Euroway 18 (E18) 50 % from 1994 – 2004. The growth has increased even further during 2005-2006 [15].

### 3.6 Strange incidents and "close by episodes" – explainable or unexplainable?

Shortly after the new E18 was taken into use in Vestfold in 2001, there were reports stating that dangerous and strange incidents had occurred. A couple of examples [12]:

- + *November / December - 2001*: Two incidents where cars slid off at the exit at Grelland southern direction.
- + *July 18 - 2002*: A "ghost driver" is being observed going in the wrong lane and direction from Grelland southbound towards Kopstad. The incident is reported to the police and the driver stopped, - just in time.

Now, we've already argued that such occurrences may relate to a lack of communicative skills and procedures among road planners and road constructors. Making procedures "for production" is quite different from making procedures "for protection" [4].

### 3.7 Hunting for a new common denominator for traffic communication ann. 2005

Our modern world of traffic is being communicated. In the information age truth itself, seen as Kant's "das Ding an sich", isn't always adequate. More and more we have to absorb and construct our own understanding of reality based on communicated versions of the world, interpreted subjectively as Kant's "das Ding für mich" [16], [2]. The media philosopher Günther Anders states that "the world is now *mine*; that is: "*my made image*", yes, it's truly turned into a "representation for me" [17]. The media analyst Lawrence Grossberg affirms that "It is becoming harder all the time to tell the real world from the media world." [18]. But why, then, hasn't the subject and practice of modern planning been able to develop sustainable solutions to the road safety problem in accordance with Weber's rationalism [19: 24] and Habermas' understanding of communicative action [20]? Is an explanatory common denominator overlooked?

This study is trying to trace down such a compound. Most probably there isn't any universal formula like a "masterplan of planning". But on the other hand, why couldn't road safety's complexity and challenges be understood better as a holistic, interconnected functional entity?

Based on the introductory discussions the study launches the thesis that **the road itself could be perceived and understood as a mass medium. Indeed, the road as a mass medium can prove to be a useful model for understanding the multidimensional complexity.**

## 4 BRIEFLY ABOUT SCIENTIFIC METHODOLOGY AND STANDARDS

The study "The Road as a Mass Medium – a different approach to road safety", just like the title indicates, breaks with how the road traditionally has been comprehended. Thus it also shakes the foundations of established safety-thinking.

For that reason the standards of the study's line of attack and research work had to be very strict, in order to secure potential support for the hypothesis. The research work had to meet 8 indispensable methodology claims: 1) The necessity to categorize instrumental and communicative professional solutions, 2) The need to apprehend scientific and theoretical qualities and connections, 3) The importance of using typologies 4) The need for relating findings to lingual patterns, 5) The strength of combining qualitative and quantitative data, 6) The use of methodical triangulation, 7) The need to base conclusions only on triangulated significance, 8) The importance of user oriented approaches and representative validity.

The study utilized several different scientific methods within a triangulated method design. That implies that safe conclusions only could be drawn when all the methods significantly revealed the same findings and discoveries.

Based on this fundament the thesis about the road as a mass medium was then investigated scientifically and thoroughly through:

- an analysis of theories and specialist literature
- a scientifically controlled and executed interview with professional signers
- six field researches of road- and intersections on E18 - and
- a terminological statistics analysis.

31 scientific detections were revealed, of which some will be presented here.

## 5 THE THESIS: THEORETICALLY VERIFIABLE AND USEFUL IN PRACTICE?

### 5.1 Search in specialist literature – and other research works

Very careful source and database browsing substantiated that the thesis is new and previously neither stated nor discussed. Wide ranged manual and electronic investigations and scans of thousands of electronic sources confirmed that the concept of understanding the road as a mass medium obviously hasn't been approached before. The fact that the idea is uniquely new, means that it can open new doors to encountering the road system's interactive functionality towards its users.

### 5.2 The road as a mass medium, a valid idea by scientific and philosophical standards?

The study didn't only search explicitly for support within specialist literature and theory – it also looked for the absence of communicative factors. Such missing links could also implicitly explain hazardous events and thus the importance of using communications competence in road planning and road operations.

Steven Jones is among those who pinpoint modern society's "time-space compression... Processes that so revolutionize the objective qualities of space and time that we are forced to alter, sometimes in quite radical ways, how we represent the world to ourselves." [21: 240]: The result is comprised and compressed reality pictures like "the global village" and "spaceship earth".

Media also has sociocultural functionalities because "it's the medium that shapes, and controls the scale and form of human association and action." [22]: 9].

Neil Postman looks at the dualism of media's mirroring and participating in real life and states, in line with McLuhan's ideas that "The medium is the metaphor" (Postman 1985: 3-13). At the same time Postman interprets the media world and speaks about media itself as *epistemology*. He finds some [media] truths epistemologically and qualitatively better and prefers the written word to TV, because "television based epistemology pollutes public communication" [14: 3-13].

Terje Rasmussen describes sociological integration mechanisms and says that: Social relationships are canalized via transfer mechanisms like railways, aircrafts, roads, the press, TV and modern tele communications systems." [23]

We learn that there exists links between the idea of the road as a mass medium and different scientific traditions. The road's characteristics are important, while as epistemology and hermeneutics establish consciousness about the connection between media and reality.

### 5.3 The road as a mass medium – manifested in media literature?

The media literature doesn't, as far as my study detects, directly define the road as a mass medium. But, by different means, it supports the hypothesis and definition and adds substance to this way of thinking.

Jon Bing writes [24: 28]: *"Just think of the weird language consisting of traffic signals and signs. So complicated that one has to pass an exam to get a driver's license. Think about how this language is integrated in the landscape by the use of signing of roads etc. Imagine that someone actually has suggested creating a minimalistic painting of enormous proportions: A white line on a black asphalt background from Norway in the south to the north. The centreline of E6, more than 2000 kilometres, a painting that would make Christo – the guy who wraps in houses and turns them into art- jealous, if he knew."*

These considerations tie tight bonds between "medium", "communications" and "transportation" and correspondingly support the concept of the road as a medium.

The linguistic analogy between on one hand a communications medium seen as something that physically transports something else and on the other hand vehicles perceived as both objects and consciously acting subjects in a “traffical” environment, is striking. McLuhan writes that “the expression “communications” has been widely used in connection with seaways, bridges, rivers, canals, roads and bridges, before it was transformed to “information movement” in the age of electricity.” [22].

Mass media are in other words both tools and infrastructure for both mass communication and mass communications.

All of the road, with all of its infrastructure, its signs, symbols, markings, but also the adjacent terrain, the natural scenery and the agricultural landscape, the results of landscape architecture – and the road’s actors and operators communicate and are included in the understanding of “the road as a mass medium”.

And, indeed, the road is mass communicating and its mass communication is interactive.

5.4 Is there a good recipe for mass communicating through the road as a mass medium?

Can mass communications on the road be qualitatively standardized to secure truthfulness and thus safe traffic? A common, general definition of prima mass communications does not exist. Communications solutions in general need to be adapted to the time and situation they’re supposed to function within. That means that it’s difficult to find an all purpose formula for road safety both within the traditional and the mass medium context. But it isn’t impossible. The key solution lies in user orientating the road safety and signing work:

*When the road users, spontaneously and intuitively get a safe feeling of – and truly and really experience – that the complete information from the road’s surroundings, road design and the road itself together with supplementary signs and markings, guide and inform rather than distract and confuse them, then this qualified experience of being informed is indeed the very confirmation of the fact that the road as a mass medium is communicating well.*

In other words: The proof of the pudding is the eating. We need to pick up, understand and use the know-how that’s built into “customer satisfaction”. The two media analysts Marshall McLuhan and Günther Anders put this into perspective.

“The media is the message”, McLuhan states, telling us that both the messages and content that media [the road, its surroundings and users] communicate, the way this is carried out and the means by which this is done, all in all must be understood as one communicative “organism” [22].

Günter Anders puts forward a number of statements through which he elegantly and stringently explains the perceived TV version of the world as untrue and unreal: To him the media version of reality is a false and secondary picture, but with a convincing power. Not only the fake that is being told, but also the falseness of media itself conquers us. Indeed, it makes us prefer the falseness, while our primary experiences are being faded out. Anders’ ideas matches McLuhans postulate about media and messages when he states that: “Transportability, which used to be a quality of reality, seems to have infected the things themselves.” Anders’ metaphorism is closely connected to the road and traffic [17].



I would say that both Anders and McLuhan make quite obvious the parallel between sitting in a chair watching the false TV version of reality and driving a car while the road as a mass medium brings us it's picture of the world. In both settings... :

"The format is shrunk within the TV-cabinet's and the windshield's frames. The incidents occur behind a glass screen. The TV sound can be turned up or down and the traffic sound can be let in or out by opening or closing the side windows. We watch the TV world, without the possibility to participate directly in it, in the same way as we, while watching, pass the world alongside of the road. In both cases we meet the world's cold – or warmth – inside our own well regulated or conditioned climate. And whether we see fiction or news and documentaries we evaluate it all at a distance, happy and comfortable sitting in our TV chair or our car's front or rear seat. As TV-consumers and road consumers we are fed with surprisingly similar impressions. The road, with its multidimensional expressions, appears - in line with the TV, as a combination medium for the masses." [32].

When it's made obvious that the road's characteristics matches the characteristics of mass media, then it's given that the road also communicates like a mass medium. That implies that not only the ontological reality but also the communicated picture of reality carries with it the basis for safe actions in traffic. To obtain and maintain road safety two claims thus must be met:

- (1) When the road as a mass medium communicates its picture of reality it needs to be in accordance with what is ontologically real; it must be true! - and
- (2) Communications must be effective and the communicative codex has to be understood and met.

## 5.5 Signs and signing "as normal" – part of the road's mass communications

Based on the definitions above signs and the skill of signing are both necessities and success factors that influence how the road communicates with its users. The NPRA has its own "normal" or handbook (Handbook 050) telling how to make signs and to use them [25]. But the magic difference between an instrumental or communicative approach is not addressed in the handbook.

Are signs included as information carriers in true and safe mass communications? Egeland differentiates between signs as being simple and plain – and symbols that are more ambiguous and advanced. Signs have their own dogma: semiotics. But semiotics is also developed from a theoretical tradition that links "cultural context" and "human behaviour" [31].

## 5.6 The road as a mass medium – usable within planning?

John Friedmann's "transactive planning", I claim, links my study's user oriented perception of the road as a mass medium to planning theory [26: 171-194]. Friedmann's ideals for cooperative solutions between "planners and clients" through mutual learning reflects a seek for balance by using communicative processes. The planner's causal language isn't in harmony with people's every day communications. Therefore a mutual way of communicating needs to be established. This line of reasoning has a link to how roads are planned, built and expressed.

## 5.7 Risk management must be based on a humble understanding of reality

By the light of the conception of the road as a multidimensional complexity it's necessary to point out that however well explained, the mass medium model doesn't offer a complete understanding of how the road system works. Within risk management and when following

up the ideas of the Zero Vision it's therefore necessary to move humbly. First of all visions and control systems must emerge out of what is regarded as ontologically and epistemologically true – not the other way around. Secondly routines and systems must not be turned into rigid and autonomous solutions. The fact that neither the new, aspiring Zero Vision has an answer to everything, is among others underlined by the Dutch engineer Hans Monderman's principles of "roads with no signs, and [with] thinking drivers", which exclude both signs and other risk preventive measurements and restore the driver's supreme responsibility [27].

#### 5.8 Traffic pedagogy can contribute to correct use of the road as a mass medium

How the road and its users communicate is also a pedagogic process. Many drivers soon learn that real life traffic isn't always functioning the way the book says it should. Breaking traffic rules is often catching. So how, then, secure that taught knowledge and correct behaviour remains – and are reinforced as repetitive, interactive learning through road design and signing that intuitively earns the drivers respect?

If the NPRA uses the qualities of the road as a mass medium, much can be improved. Positive sanctions work better than negative, and need to be creatively conducted. The NPRA also needs to clarify better who it's actually putting up signs for; all road users or only those certified? The need for intuitively understanding is constantly present. To communicate in a way that both old people and children understand can be vital. Among a wide variety of specialist literature in this field maybe Strømme og Johansen's "Traffic all the way" best clarifies the potential by linking "children, environment, safety, traffic education and life long learning" [28].

#### 5.9 Psychological insight into traffic functionality presented by the road as a mass medium

The road as a mass medium should, and must be, seen as a kind of traffic psychological framework. The psychology field is wide. The study therefore focuses on the complexity that behaviourism alone represents. To perceive has to do with how different "traffical" circumstances are received. But what is received also needs to be internalized. Jensen and Rattleff tie the perception of the world to the socialized and communicated picture of real life. They encounter even closer the thesis of the road as a mass medium and the importance of signs and signing by explaining that by linking perception and symbols, we find that "people have a tendency to structure the world so that well known items are what (we think) we see and then adapt them [...gestaltically] to recognizable connections" [29].

## 6 THE SIGNERS – INTERVIEW REVEALS KNOWLEDGE, ATTITUDES, DILEMMAS

During a qualitative, scientifically controlled interview with the NPRA's professional signers, it becomes obvious that the group must be characterized as unbalanced both when it comes to a high age group and male dominance. The signers mostly have a technical background and boldly recognize themselves as technicians. That's no optimal competence profile for professionals who above all are dealing with communications challenges. High age and education do ensure experience and know how, but can be a drawback in the light of new hermeneutic understanding of planning and communications.

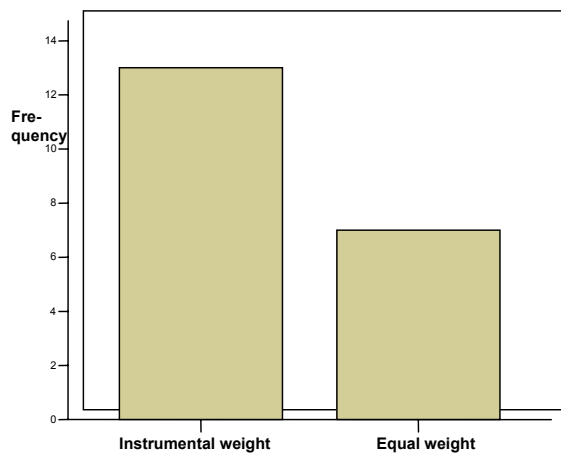
The interview was thorough and in depth. 20 employees were systematically interviewed for approximately an hour each. The "population" could be divided into two sub groups, consisting of signers and sign auditors. That made cross controls and different comparisons possible and thus strengthened the interviews reliability and validity. For

methodological reasons the instrumental and communicative dichotomy was kept hidden for the participants along the way, with the intention to eliminate the risk of tactical answering. The dichotomy was, however, well taken care of and activated in the way that all questions with given response alternatives put a fifty – fifty weight on either instrumental or communicative possibilities. Answers to more open questions were classified afterwards in a similar way. The interview material contains very interesting data and revealed several scientific findings. In this paper we'll have to limit our comments to just a few, especially linked to the road's qualities as a mass medium.

The signers were asked to give priority to two characteristics that in particular describe “a road”. The given response alternatives were divided into an equal amount of instrumental and communicative opportunities, but randomly distributed so that the dichotomy was camouflaged. They were asked to pick two alternatives. That could on one hand diffuse and zero out tendencies since the answers theoretically could end up with a fifty - fifty total score. But on the other hand a clear tendency would be solidly substantial. Thus it was very exciting to analyze how the answers were distributed within the dichotomy.

Fig. 03: Choose the two most important characteristics of what a road truly is	
(1) A traffic risk zone	4
(2) A physical communication line	4
(3) An arena for performance	1
(4) A technical facility/solution	4
(5) An arena for communications/ a mass medium	1
(6) A socio cultural arena	0
(7) Part of necessary infrastructure	15
(8) The user's understood picture of, and experience with, the road	1
(9) A place for transportation and transporters/road users	5
(10) A solution for crossing terrain	5
11) Other suggestions, make yours	0
Sum	40

Fig. 03b: What is a road - dichotomy spread out on responders' tendency



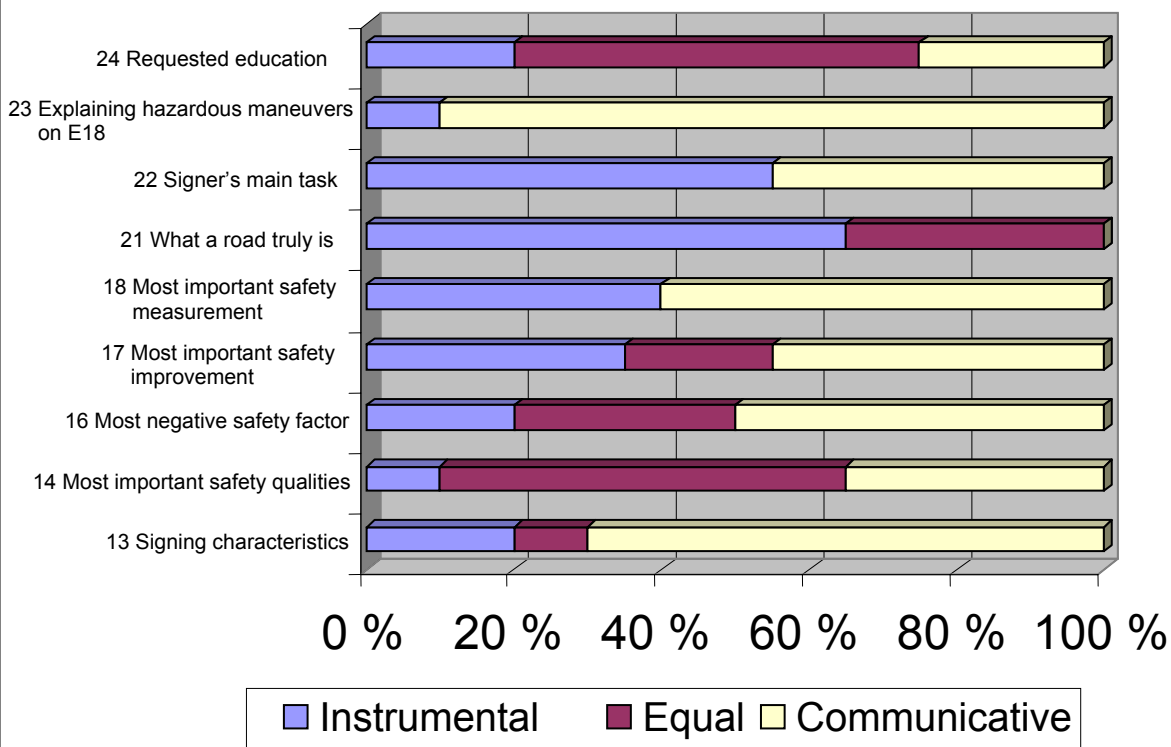
The instrumental alternatives are marked yellow in Fig. 03. Out of 20 respondents 13 explicitly chose instrumental alternatives, while as none chose only communicative. 7 chose a combination of the two.

The findings were significant. When describing the road the respondents obviously preferred an instrumental understanding. Here the dichotomy was most clearly expressed. As a contrast, the experts' answers to what they found explained the wrong and hazardous actions on E18, put far more strain on communicative factors. Once again they underlined roundabouts, crossings and intersections as main challenges.

Similarly 9 other items were also dichotomized in the interview. When the answers are judged as a whole against the 9 dichotome parameters, two profiles appear and tell that executive signers and even more the traffic safety auditors in general find communicative factors more important than instrumental. At the same time this profile is broken by one very clear exception: The perception and understanding of the road itself. This unmasks a dilemma and a professional challenge: The professional signers and auditors apprehend the road instrumentally, as a physical phenomenon. This should indicate that problems on

the road need physical treatment. But at the same time these specialists recognize and admit that road safety problems mainly have a communicative character and depend on other kinds of solutions. By comprehending the road as a mass medium the way this study has defined and explained it, these two apparently opposite viewpoints can be joined in a dynamic understanding that opens the door to new, interactive road safety solutions.

**Fig. 04: Answering profile shown as instrumental, equal or communicative score**



In Fig. 4 those 9 dichotomized groups of answers are sorted out according to the same typology and the same three response categories. The bright colour here represents communicative answers and attitudes. The registration number 21 deals with the true nature of the road and represents a clear instrumental exception. Registration 23, which deals with wrong manoeuvres and hazardous actions on E18, clearly emphasizes communicative factors.

## 7. THREE FIELD EXPLORATIONS – ONE ANALYSIS OF STATISTICS

The study also consisted of three field explorations and one analysis of statistics terminology.

### 7.1. Signing alongside E18 – communicatively proper?

In a limited field exploration carrying out scientifically controlled observation of the signing solutions alongside E18, the 196 km long distance from Holmestrand (north) to Arendal (south) was investigated 2005-02-25. During the observation registrations were made based on this study's definition of how user oriented communications ought to work within the conceptual understanding of the road as a mass medium. This definition is, as we've learned, founded on the intuitively safe feeling and real life experience that road design,

the road body and the road signing guide and inform rather than disturb and confuse the road user. The exploration revealed only a slight number of incidents or solutions that broke this communicative rule. Signs alongside E18 on this chosen distance don't appear to be any big road safety problem.

## 7.2 Four intersections and roundabouts – where things may also spin around for NPRA

The interviewed sign experts stressed that complicated intersections can be regarded as risk areas. Four such crossings with flyovers and supplementary roundabouts were checked out on the E18 distance between Holmestrand and Langesund. Once again the markings and signs used, were evaluated on the basis of the communicative operationalized definition of the road as a mass medium. The scientific revelations confirm findings in the qualitative interview. Continuous marking and signing on and alongside the motorway isn't the most demanding challenge. On the contrary the communicative solutions at limited, but complex, areas are. It's when the road is manifested as a multidimensional complexity that the communicative challenge needs new, professionalized solutions.

Complicated intersections and roundabouts, often interconnected, do not appear to be communicative. In four such crossings 46 communicative (C) and 16 instrumental (I) weaknesses /and malfunctions were detected. Most frequently *“bad guidance” and to a large extent “inconsistent local” and “incoherent regional” consequence and totality appear. In other words: The road speaks to its users in an inconsistent and confusing way.*

## 7.3 Road work warnings – an observation of unsystematic processes

Along the same distance and under the same communicative criteria the study also executed an observation of how road work was signed.

This scientific analysis clearly proved that NPRA communicates repair-, service- and maintenance work too unsystematically and without necessary regional consistency. In Norway this kind of work is left to competing private enterprises and regulated by “function contracts”. The observation showed that ongoing road work was communicated to the road users in many different ways, depending on which of the entrepreneurs that was in business. If the NPRA had set a standard, it was obviously not being followed consequently. The road users experienced that the same danger or risk could be signed confusingly different. The worst examples represent traffic danger because they for instance don't communicate that a full stop can be needed – or serve information overload. Often there was a mismatch between what the signs told and what the rest of the road communicated. The communication appeared to be instrumental rather than communicative.

## 7.4 Analysis of statistics terminology reveals instrumental unbalance.

Further on the study also contained an analysis of statistics, which judges the terminology used when accidents – fatalities included - are described (STRAKS-statistics). The terms were categorized as either communicative or instrumental. The analysis detected that road and car accident statistics are marked by key words and word categories that are clearly more related to instrumental than to communicative criteria, concerning both volume and frequency. The road's qualities and demands as a mass medium are hardly taken into consideration as describing or explaining factors. Only 1 out of 37 frequently used terms can be regarded as specifically communicative. However several supplementary communicative terms could easily be added.

The instrumental overweight makes it difficult to describe chains of causing circumstances or to lift forward descriptive connections behind road and traffic accidents. Such information doesn't appear clearly and directly in the STRAKS-statistics, only indirectly. To work for including new, communicative criteria in the statistics can lead to better traffic understanding and learning, and thus have an accident preventive effect.

Fig. 05: Statistics terms used professionally, systematically in road accident statistics / STRAKS analysis				
TYPE/ FREQUENCY	KOMMUNI- CATIVE TERMS	BOTH C and I TERMS	INSTRUMEN- TAL TERMS	TOTAL NUMBER
In use	1 (regularly)	13 regularly)	23 (very often)	37
Possible communi- cative supplementaries	7	17	24	48

## 8 DOES RECOGNIZING THE ROAD AS A MASS MEDIUM HAVE PRACTICAL IMPACT?

One primary task of the study "The road as a mass medium" has been to map and analyse today's understanding of the road and of signing. Whether or not this research work can be used in a practical way is an important question. It's all about in what way the recognition of the road as a communicative arena can contribute to clarifying the "traffical" truth and on that ground improve road safety. The research's findings imply that communications on and alongside the road still is primarily based on instrumental efforts. But if the road is comprehended as also being and working as a mass medium, communications can be corrected and the repertoire and range enriched. Then a rarely exploited opportunity is opened for road planners, road constructors and supplementary and supportive professionals to really take into use the language and tools of mass media in order to communicate better with the road users.

### 8.1 A new definition – a new understanding – new professional safety possibilities

Let me introduce a few aspects by raising some questions:

- A movie editor knows how to conquer his audience – maybe the movie codex also can be used for improving information on the roads?
- Can a professional photographer's know-how of how to compose good pictures be used to improve signing?
- Can the fast way TV and commercials tell their stories be transferred also to signing, so that busy drivers get the pieces of information they need within seconds?
- Can media artists contribute to more creative sign solutions?
- Can media's news editors teach the road authorities something about fast information processing?
- Can the multidimensional complexity be edited.... in new ways ?
- Can the radio media's imaginary pictures be translated into visual road language?
- Can commercialism and journalism add communicative totality and user orientation?
- Can information consultants contribute to work out new signing strategies?
- Can different media-styles teach us how to adjust road information to the user's frequency?

The operators and users of the road system know what kind of information that works – thus they must be more involved in the making of communicative solutions!

The approach towards grasping these possibilities and internalizing the understanding of the road as a mass medium is already taking place in certain ways, however modest and still rather unconsciously. The radio, functioning as a part of the communications platform the medium “the road” represents, is an interesting example. The “traffic radio station” P4 today partly works as an information system for Norwegian road traffic.

The drivers are defined as primary listeners and thus frequently

served “auditive road signs” and traffic news. The Norwegian national broadcasting (NRK) has developed some specialized, similar services. Also the NPRA is trying out new “ways”. Later years’ campaign signing, using large posters appealing to the drivers by the help of emotional expressions stating: “remember your safety belt” (see photo), is actually pushing the road’s potential as a mass medium.



So when you are listening to traffic news on your car radio and looking through your windshield at safety posters that impact your feelings and conscience – while being captured by the picture of the road and its surroundings that the driving experience offers you - don't then these expressions sum up to a woven picture communicated to you by the road itself as the medium? And isn't this holographic picture serving you and your fellow road users the pieces of information you need to quickly make true and safe “traffical” decisions?!

Unprejudiced recognition of the truth about the road's real character and being, allows one to work in better cooperation with the road. In that way the communicative power of the road can be turned into action for improved safety.

The road hasn't just offered us - and is continuously offering us – transportation and the chance to be moving somewhere. It will also forever, by its own characteristics, move us.

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