Norms and values in contemporary society: an application to the field of sustainable transportation

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Abstract

The general objective of this paper is to have a better discernment of the implications of norms and values in contemporary society. Its specific objective is to apply this preliminary theoretical reflection to the critical and practical question of finding a well-founded way to promote sustainable transportation effectively. In this connection, the paper includes two parts, in order to present the setting and the treating of the problem.

1 Setting the problem

1.1 Preliminary considerations and definitions

1.1.1 Norms and values

In behavioral sciences, especially in psychology and sociology, norms are general precepts which, being internalized or accepted by individuals or by social groups, induce conformity in simple actions or in complex judgments. Values are of importance to philosophy, economics and sociology. In philosophy values are part of ethics and aesthetics and give rise to inescapable and fundamental controversy. In economics the theory of value is usually equivalent with the theory of price. In sociology, the field where we are particularly concerned to, values are constituent facts of social structure. The sociologist does not try to
assess their intrinsic worth, but he treats them as scarce objects of socially conditioned desire [1].

In our sociological perspective, “values” involve desires, and “norms” involve constrained obligations. In this sense, “values” as important as they may be, evoke a kind of wishful thinking and remain frequently ineffectual in practice. On the other hand, “norms” are mainly effective in every day life. As a matter of fact, values are socially significant and meet their real goals when they are in conformity with determinant social norms.

According to Max Weber’s celebrated essay on The Protestant Ethic and the Spirit of Capitalism [2], the basic values of modern society prioritize socioeconomic aspirations: prosperity for all, profits for business, full employment, good salaries, high level of consumption. These prioritized values did not change since the beginnings of the modern world. In our days, a new emergent society maintains them entirely, while adding two unedited devices: strong respect to the environment and an invading propensity to the massive use of informatics and of new information and communication technologies, in business and in private life.

Unlike of values, that knew some newcomers recently, norms are absolutely unchanged in contemporary society (cybersociety). So in every kind of business, the supreme norm that determines the means leading to the desired goals (socioeconomic values) remains essentially unchanged and undeniable. What is to be done for being successful is to gather societal forces and capital in order to make money and to amass profits. For attaining this goal a unique means (it is an unavoidable social norm) is imperative: each investment must be preceded by a rigorous calculation of feasibility, i.e., of being sure of remunerative commercial and financial returns. Before the first step, every leader must calculate costs and benefits. Put in other words, without a substantial amount of capital no significant project is possible. Without rigorous previous calculation, no capital is available. We face then a clear and decisive vision. In the socioeconomic milieu of modern society, the norm of success, constant and steadfast, involves a few basic stages. (i) To define a set of goals coming in terms with the desires and expectations of the population. (ii) To prepare a detailed project in this connection. (iii) To calculate its costs and benefits. (iv) To make sure that the operation is socially feasible and profitable in commercial and financial terms. (v) To gather together societal forces in order to dispose of the necessary capital for the launching of the project. As Max Weber has said lucidly [3], modern society has leave off the world of magic to dwell in the world of rationality.

1.1.2 Sustainable transportation
We adopt the following definition [4]. “Sustainable mobility is a term that can mean different things to different people. The World Business Center of Sustainable Development defines sustainable mobility as the ability to meet the needs of society to move freely, gain access, communicate, trade, and establish relationships without sacrificing other essential human or ecological values today or in future”. In agreement of this definition, the promotion of sustainable transportation constitutes the overarching goal of our intellectual work [5].
1.1.3 Norms and values in the field of sustainable transportation

1.1.3.1 At the level of values, the great majority of specialists agree. The deficiencies of the actual system (pollution, congestion, severe and countless accidents) must be rectified.

1.1.3.2 At the level of norms, things are quite different. From a sociological, not an axiological point of view, we can state that in the realm of means, most people prioritize mitigation measures involving low costs and only a small minority prioritize substantial innovative measures and high costs. In fact neither of them obtain significant results. Why?

In our view, the real point is not just the calculation of costs. How many billions did the investment on highways, harbors and airports cost in the last century? How many billions do our informatics equipment cost to day? The real point is elsewhere. The failure or the success of socioeconomic endeavor does not depend on costs, but on an accurate preparative work calculating costs and benefits and effectively balancing values and norms, social aspirations and sound management imperatives.

1.1.4 The concept of societal integration

As elaborated in a Durkheim’s authoritative piece of work [6], this concept is a basic guideline for our inquiry.

1.1.4.1 General principle. A sane society, a sane world society, is the highest entity human beings can conceive of. Because they need to be together, humans must collaborate if they want to survive. In the long run, a sane society is not the fruit of endless conflict or of individualistic choices, but the fruit of a definitely integrative endeavor. Contemporary, over-diversified society has therefore but one single option for survival: to promote integration, to find the best ways of sharing individual and social abilities and attainments. In Durkheim’s view [7], this vision stems simultaneously from religious, moral, historical and sociological considerations.

1.1.4.2 Two constitutive elements. Societal integration implies two elements: (i) a coherent combination of action programs, ruled by an organizing trustworthy principle and (ii) a convergence of societal forces that pursue a common goal, because they can only afford this goal together, and because this collaboration responds to the interests of each of them [8].

We will see below that the assembling of action programs and of societal forces (governments, business, experts, civic associations) that can implement the renewal towards a sustainable transportation system, correspond essentially to the concept of societal integration.

1.2 Provisional conclusion

The above socioeconomic and epistemological reflections help to understand the problems and the queries of the contemporary society [9] in the sustainable transportation issue. There are countless initiatives. The results seem extremely
weak. Either because the remedies are too small and consequently not efficient enough, or because they are not sufficiently prepared in sound managerial skill.

These reflections have lead to a central hypothesis. The move to sustainable transportation requires a plan of action based on huge investment and sound managerial skill, in full agreement to the norms of the contemporary world. How we go about it will be discussed below.

2 Treating the problem

2.1 Delineating specific goals

According to many specialists [10], sustainable transportation must include three complementary measures in order to help millions of people all over the world. (i) To ensure the proliferation of high speed (including short and daily trips) to overcome congestion. (ii) To expand automation and cybernetic control of the transportation system in order to ensure health and security. (iii) To implement energetic sources in order to be done with pollution for the present and future generations.

These values constitute an idea, a kind of basic concept. To put this idea in motion, one needs to design a project. Surely, every project involves an idea. But a project involves moreover numerous essential elements that must be described previously and thoroughly. A concept may be expressed in a few lines of writing. A project needs several pages. The reader will find in following pages a short presentation of our Project.

2.2 Designing the project

The description of our Project includes the following steps. (i) The priorities. (ii) The specific objectives. (iii) The key points. (iv) The characteristics of the work.

2.2.1 Priorities

What is most urgently needed is not endless searching for numerous sustainability measures. What is needed is to set out a comprehensive, coordinated and collaborative Project designed to prepare a new ‘world order’ in transportation that meets the needs of a vibrant economy for an equitable society and a protected environment [11].

Such a global Project, that has been rarely undertaken before, is nevertheless indispensable for a very fundamental reason. Transportation is a hypercomplex societal system that includes inexhaustible components at economic, social, and regulatory levels. Changes to this system accommodate or upset very different kinds of stakeholders (consumers, investors, public agencies, etc.). It is impossible then, to make significant changes to this system without extremely difficult consensual agreements. These agreements require a very good knowledge of the consequences of these changes, which cannot be acquired simply or spontaneously. Being extremely complex on account of the
multiplicity of the interactions at stake, this knowledge must be the result of a rigorously coordinated global preliminary study.

The essential purpose of this study is not to specify or to complain about the failures of the current transportation system. It is to find a complete, balanced and alternative transportation system that is fully aware of the potential and the limitations of the scientific, technological and regulatory resources of the contemporary world, and invites societal leaders to engage the necessary alternative investment.

2.2.2 Specific objectives

**Objective one.** To improve our knowledge on best practices concerning the following issues: the ground transportation of people and goods, the ground transportation within cities, between cities and suburbs, and between different cities, the links between ground, and maritime and air transportation.

**Objective two.** To design a well defined, balanced and optimized combination of efficient transportation modes that are destined to satisfy the growing demand for transportation in the perspective of sustainable development [12].

**Objective three.** To conceive of and to test the societal receptivity towards the creation of a collective, private and public regulatory coalition, destined to facilitate and to supervise the process of planning, developing and managing this balanced and optimized combination of efficient transportation modes.

**Objective four.** To demonstrate with facts and figures whether this new transportation system, based on this new regulatory coalition, can or can not satisfy the needs of consumers, investors and public agencies, in a way that is more advantageous than the current transportation system.

**Objective five.** To submit to consensual agreement the results of this study, in order to test its main findings, to improve them, and to move effectively towards sustainable transportation.

2.2.3 Key points of the preliminary study

In order to attain its specific objectives, the study has to analyze in a systematic manner a large number of key points. Each one of them includes the implementation of detailed analytical reports. These reports end with a coherent set of conclusions, a questionnaire for consulting external experts (to validate these conclusions), and immediate and practical recommendations. Of course, all this work implies a thorough review of the current literature.

It is absolutely necessary to show the complexity and variety of the questions that must be analyzed. A collection of examples follow.

**Key point one. The selection of time and space limits.**

**Report 1. Detailed description and justification.** The report presents a global vision of the Project and determines and justifies its main phases (at short, middle and long term) and the convenient places where the Project will be tested. This report considers just the short term and focuses its inquiry on a small suburban North American town that henceforth will be called Middletown (MT).
**Key point two. The range of locomotion technologies.**

**Report 2. The current range of locomotion technologies (for goods and people) in MT.** Using advanced data-base and statistical compilations [13], this report analyses two kinds of facts. **First.** The basic data concerning the amount of following current transportation modes: (i) Trains (conventional, light, high-speed). (ii) Cars (conventional, electric, hybrid, neighborhood vehicles). (iii) Trucks (heavy, middle, light, trailers, semi-trailers, conventional or assorted with rail or with fluvial intermodal combinations). (iv) Fluvial fleet. (v) Air connections. **Second.** A detailed picture of the current transportation supply system. (i) Daily miles covered by each transportation mode. (ii) Outstanding regulatory and fiscal measures. (iii) Costs and advantages for transportation consumers. (iv) Degree of satisfaction of consumers, and estimation of their biggest problems (congestion, pollution, accidents, etc.),. (v) Global financial input and global financial profitability for private investors and public agencies. (vi) Degree of satisfaction or disapproval of investors in this respect.

**Report 3. Conceptual design of an alternative range of goods locomotion technologies for MT.** Using simulation techniques, the report presents a picture of a goods transportation supply system, destined to improve productivity and to minimize incoherent daily displacements, thanks to two essential measures. **First.** The distribution of goods founded in three basic principles. (i) A large network of high storied warehouses destined to lay down systematically all goods that come from without and that will be distributed in MT. (ii) These warehouses receive the goods coming from without MT only by an underground or elevated railroad system (no exterior truck can circulate inside the town). (iii) These warehouses distribute the goods by a network of light electric delivery vans. **Second.** The movement of goods (from without to within and from within to within) ordered by a complex data processing console that avoids useless repetition of displacements, and provides the best service.

**Report 4. Operational design of the preceding conceptual alternative for goods locomotion technologies.** The conceptual alternative has been studied in the report 2. This system must be also defined with all the details that permit the potential investors to put the system in motion. Given the large number of such systems [14], report 4 determines which one offers the best cost effective conditions.

**Report 5. Conceptual design of an alternative range of people locomotion technologies in MT.** Using simulation techniques, report 4 presents a people transportation supply system designed to satisfy the needs of citizens, to improve productivity and to minimize time-consuming displacements. Two initiatives will be tested. **First.** Building a transportation supply system founded on four complementary principles. (i) An efficient network of stations all over MT, that offer inter city connections, by elevated (or underground) high-speed trains [15]. (ii) The implementation of an efficient network of stations that offer the largest possible quantity of interconnections, by elevated (or underground) light trains. (iii) The proliferation of smart neighborhood electric vehicles [16] designed to access with easy the network of train stations, or to commute between home, station, work, marked or leisure places. (iv) The rational utilization of
conventional automobiles mostly equipped with electric or hybrid engines.

**Second.** Moving people in MT (from within to without and from within to within) thanks to a complex data processing console that, previously informed of specific needs by a simple telephone call, helps to avoid waste of time and provides the best service. Cars will not disappear. Just change their function in the alternative system.

**Report 6. Operational design of the preceding alternative.** The conceptual alternative studied in the report 5 indicated three kinds of locomotion systems: high-speed trains, light trains, smart neighborhood electric vehicles, conventional cars equipped with electric or hybrid engines. In order to attain our objectives, report 6 defines each one of these systems with all the details that permit potential investors to put the system into operation in the best cost effective conditions.

**Report 7. Current and alternative locomotion technologies in the transportation system.** Putting together the results of the preceding reports (2 to 6) report 7 sums up the characteristics of the current and of the alternative supply transportation system, in order to compare their respective costs and advantages [17].

**Key point three. The range of information and communication technologies in the transportation supply system.**

**Report 8. Information and communication technologies in the alternative transportation system.** Reports 3 and 5 introduced the concept of new information and communication technologies (ICT). Given that this concept is available in a large variety of modalities, it is necessary to choose the technologies that are best adapted and most cost-effective. Knowing that a massive utilization of ICTs is an important condition for the renewal of business, the objective of report 7 is not to share endless comparisons, but to undertake a systematic exchange with a few important corporations specialized in ICT. (IBM, Global Telematics, Microsoft Research [18]) in order to find the logistics, advertising, e-commerce, selling promotion, and public relations, that are best adapted.

**Report 9. Information and communication technologies in the current and in the alternative transportation system.** By compiling the results of the report 8, report 9 compares in detail the utilization of ICTs in the current and in the alternative supply transportation system and shows with facts and figures the advantages of the massive introduction of ICTs.

**Key point four. The energy sources in the transportation supply system.**

**Report 10. Energy sources of the current transportation system in MT.** Using advanced data base and statistical compilations, this report analyses two kind of facts. **First.** The basic data on energy: (i) the amount of energy sources consumed in the current supply transportation system, in particular for petrol and electrical power, and (ii) the origins, costs, domestic and international conditions, durability and longevity and environmental problems in their production and distribution. **Second.** A detailed picture of the current
transportation supply system based on petrol consumption. (i) Amount of the daily consumption of petrol (ii) Outstanding regulatory and fiscal measures. (iii) Costs and advantages of the daily consumption of petrol for transportation consumers (iv) Degree of satisfaction or disapproval of these consumers. (v) Global financial input and global financial profitability for private investors and public agencies. (vi) Degree of satisfaction or disapproval of these investors and these agencies

**Report 11. Energy sources of the alternative transportation system in MT.** The alternative supply transportation system proposes a basic shift from petrol to electrical power [19]. Using simulation techniques, report 11 contains two complementary issues. **First.** A conceptual presentation on the needs for electric power in the alternative supply transportation system. **Second.** A detailed picture of the production and utilization of two specific kinds of electric power. (i) The electric power used by trains, produced by central plants and distributed by a large network of cables. (ii) The electric power used by cars, buses and trucks with batteries and other technologies. For economic and environmental reasons, report 11 reviews how central plants can evolve gradually towards renewable and inexhaustible resources, namely by the exploitation of solar energy.

**Report 12. Comparative analysis of the utilization of energy sources used in the current and in the alternative transportation system.** By compiling the results of the preceding reports (10 and 11), report 12 compares the utilization of energy resources in the current and in the alternative supply transportation system in order to show with facts and figures the numerous and important advantages of the massive introduction of electric power technologies [20].

**Key point five. Costs and advantages analysis.**

**Report 13. Cost analysis.** Two elements. **First,** cost analysis is an elementary operation, because it demands a simple alignment of available data. It is also ineluctable, because reorganizing transportation requires huge investment and therefore a good understanding of what is at stake. **Second,** the most important function of cost analysis is to inform stakeholders able to move towards innovation. The knowledge of these costs can discourage a business leader, no doubt. But it can also incite her or him to innovate and to set up the conditions that permit to exceed these costs with remunerative benefits.

**Report 14. Advantages analysis.** Advantages analysis presents a more arduous task. It requires complex preparatory and imaginative work. Using techniques of simulation, report 14 analyzes the potential advantages of two important components of the alternative supply transportation system. **First.** The creation of a network of warehouses destined to clear definitely the traffic jam in MT. Cost analysis alone can lead to the conclusion that the operation is very high. Advantages analysis helps to prove how this operation can offer profitable returns. **Second.** The combination of new technologies that improve the way of life of millions of commuters that must travel daily. The cost of such an operation is very high indeed. But report 14 calculates also the attraction that these new technologies provide for millions of daily commuters and estimates thereafter their social and economic profitability.
Report 15. Feasibility analysis. Costs and advantages analysis provides the basic elements that lead to major decisions. The feasibility of an idea is conditioned by an important fact: that there are sufficient reasons to convince those that can do it, to do it. Whether or not the proposed project is useful, harmless and profitable, is what stakeholders must be convinced of. Report 15 finds out if the elements involved, will point or not to the proposed alternative.

Key point six. An institutional regulatory coalition in transportation supply. Report 16. The successful integration of societal forces. This is a complex issue that requires a profound knowledge of the recent evolution of industry and governmental affairs [21]. Three main questions should be dealt in this connection. First. A conceptual frame of reference, that following namely the theoretical insights of Durkheim’s work [22], designs and justifies the legal, political, social and economic bases of such a regulatory coalition. Second. Quantitative estimates. Considering the different situations of the different stakeholders potentially interested to enter in the coalition, quantitative estimates of the cost and the conditions of success for each individual unity, are absolutely indispensable. Third. A detailed Delphi consultation [23]. In order to arrive at practical results, the results of previous work must be validated by our panel of critics.

Key point seven. Environmental analysis. Report 17. The volume of pollution created by the current and the alternative system. Based on extensive knowledge of current literature and simulation techniques, report 17 provides a picture of the volume of pollution of the supply transportation system, the current and the alternative. This comparison is essential for obtaining our objectives.

Report 18. The amount of money saved by the alternative system. The cost and advantages (for customers and for investors) of different transportation technologies has been analyzed previously. One complementary point has to be equally analyzed. The cost of the respective volume of pollution must be calculated in order to provide a valuable argument for sustainable transportation.

Key point eight. Social analysis. Report 19. Social analysis. Based on a sound knowledge of current literature [24], report 19 organizes different types of inquiries, on the respective advantages of current and alternative supply transportation system. First. The interview of goods transportation practitioners, and of daily users of people movers. Their assessment concerns important preferences, as comfort, time spent, price, returns, safety, prestige, etc. Second. The interview of qualified members of different public agencies, concerning most particularly the money saved by the alternative system in the matter of pollution.

Key point nine. Local, national and worldwide relations. Report 20. The geo-political analysis. Report 20 addresses three essential questions. First. Interests and resources of investors and corporations. The
planning of an alternative supply transportation system in MT includes large corporations and national business leaders. They have to be invited to participate in the MT plan of innovative work [25].

**Second.** Interests and resources of national public agencies. MT’s public authorities do not have the sufficient regulatory power and must negotiate important decisions with the national government. Report 20 has then to investigate the deals that have to be made.

**Third** Interests and resources of the world market. A profound change of the supply transportation system in MT is not possible without considering international relations. Such innovative change will surely reverberate in a good part of the world and this dimension has to be taken seriously.

### 2.2.4 General characteristics of the preliminary study

Some basic indications are submitted for reflection and discussion. Timing: Five years. Budget: One million dollars per year. Sources of funding: A coalition of interested corporations and public agencies. Direction: A qualified management coordinating team. Implementation: A team of qualified specialists invited to prepare and to confront the numerous analytical reports.

### 3 Concluding remarks

As it is stated above, the primary and immediate purpose of our work is not the direct promotion of social change. Our primary purpose is to ask for collaboration in order to prepare a global study on the societal needs and resources concerning the desired renewal of supply transportation. In this connection, our primary and immediate purpose is not at all of a speculative order. Our purpose is practical in two senses. (1) To give a good idea on the key points that should be attentively considered to face effectively social values according to the requirements of social norms. (2) To prepare a detailed consultation of societal leaders in order to ask them if and how the results of this study can incite to take the pertinent measures.

In brief, what is proposed here is a global, cost effective study, that has never been made before, and that is indispensable to investigate the societal interest and the practical feasibility of the renewal of the current transportation supply system, in order to improve its social, economic and environmental capacities.

The every day experience tells us that important societal forces are interested in funding, launching and supervising this study. All other initiatives necessary for the practical pursuit of a sustainable transportation system will follow later, once the analytical results have been sufficiently proved.

### References
