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# Transatlantic Environmental Security in the 1970s? NATO's "Third Dimension" as an Early Environmental and *Human Security* Approach

## *Thorsten Schulz* [*]

**Abstract**: *»Transatlantische "Umweltsicherheit" in den 1970er Jahren? Die "Dritte Dimension" der NATO zwischen Umwelt- und menschlicher Sicherheit«*. This paper deals with the early stages of NATO's "Committee on the Challenges of Modern Society" (CCMS), established as environmental "Third Dimension" of the Alliance in 1969. It discusses "environmental security" as a prime CCMS motive, assuming that the early CCMS-pioneers already projected global environmental uncertainty factors as security threats to the Atlantic Alliance. NATO's environmental concept already showed elements of environmental and human security being considered in the face of the environmental crisis. The interrelation between both is examined by means of a knowledge-based history approach on the example of the CCMS "Road Safety" project (1970-1974). In the course of the project, NATO's environmental security assumptions turned into a technological leitmotif dealing with technically controllable environmental risks as well as basic human and individual needs for security in a technological society. Therefore, the CCMS provided technical solutions to environmental and security policy problems and, finally, did not develop any political patterns of acting as a risk orientated environmental alliance.

**Keywords**: Environmental Security, Human Security, Transatlantic History, NATO, Environmental History, Environmental Conflict, Environmental Problems, Road Safety, Knowledge Development, Knowledge Society, Knowledge Transfer, Scientification, 1970s.

In July 1969, Apollo 11 discovered another unexpected spacecraft during its spectacular moon landing mission: Planet Earth. The pictures from outer space showed mankind impressively that the blue planet was a unique and tremendous "spaceship".[1] But it was also a highly fragile planet, as scientists and doomsday prophets alike warned at the same time. Trained in the art of prediction, they opined grimly that a worldwide environmental crisis would lead to a global environmental breakdown within a few decades.[2] Simultaneously, social movements such as the *New Left* challenged the political system as well as the

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[1]  Höhler 2008, 65.
[2]  Hünemörder 2004, 209-221.

economic and social order of Western societies with their ecological rhetoric and critique of consumption.[3]

In this tense atmosphere of environmental insecurity, the newly elected American president Richard Nixon introduced the idea of a new transatlantic task to the North Atlantic Treaty Organization. On April 10, 1969, the foreign ministers of NATO celebrated the twentieth anniversary of the Atlantic Alliance in Washington DC and Nixon used his home advantage in order to take his audience by surprise. In addition to its political and military tasks, he stated, the alliance was missing out on a "third dimension" – the social and natural human environment:

> The industrial nations share no challenge more urgent than that of bringing 20th century man and his environment to terms with one another – of making the world fit for man, and helping man learn how to remain in harmony with his rapidly changing world.[4]

In order to master this task, Nixon proposed the creation of a NATO "Committee on the Challenges of Modern Society", which was eventually established in November 1969 and later became known as the CCMS.

The following paper deals with the creation of the CCMS and examines whether its work contributed to the emergence of an environmental security regime.[5] Moreover, it analyzes how human security tied in with environmental concerns. At the onset of the 1970s, "environmental protection" and "environmental policy" were almost synonymous items. "Environment" was equivalent to the livelihood of man and covered the natural as well as the social human sphere.[6] Since this implied a strong anthropocentric component, the paper uses this contemporary meaning of "environment" in order to ensure that contemporary and today's connotations are not being intertwined. According to Jakob von Uexküll, the natural and social interdependency of "environment" was interpreted as that surrounding influences are deeply relevant to the life and

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[3]  Zelko 2006, 26-28.
[4]  The White House (Office of the White House Press Secretary), "Address of the President at the Commemorative Session of the North Atlantic Council, April 10, 1969", in Public Record Office, CAB 164-642, 4/130.
[5]  It is part of a larger project on "*Environmental Security in international European politics, 1969 to 1975*", which uses the examples of the Federal Republic of Germany, the United Kingdom and the United States as a point of reference in order to examine the development of early environmental security regimes within NATO, the European Union, the United Nations and the Conference for Security and Co-operation in Europe. The PhD is mentored by Professor Jost Dülffer at the University of Cologne and was supported by the German Historical Institutes in London (2007) and Washington, D.C. (2008). Since 2009, the author has been a PhD fellow of the Schmittmann-Wahlen Foundation, Cologne, supported by the Schmittmann-Wahlen Foundation and the University of Cologne (2010-2011). The dissertation will be published in 2011.
[6]  Hartkopf and Bohne 1983, 2-4.

survival of a biotic community (*Lebensgemeinschaft*).[7] Against this backdrop, the paper defines "environmental security" for a state as the absence of threats against the environmental preconditions essential to the well-being of its population and to the maintenance of its functional integrity.[8]

Researchers have often enquired about Nixon's motives for putting the environment on NATO's agenda.[9] Today, a cluster of reasons appears to be comprehensible, ranging from the consolidation of the Atlantic Alliance or the reduction of domestic political pressure evolving from social unrest within Western societies to the need to establish an effective international environmental protection regime. The following paper, however, represents the first attempt to analyze environmental security as a prime CCMS motive, its central assumption being that the early conceptualization of the CCMS already included insecurity considerations such as the global deterioration of the natural environment. In contrast to those political scientists who assume that contemporary forms of environmental security only emerged with the end of the Cold War, I argue that they were already being developed at the onset of the 1970s.[10]

The second part of the paper focuses on the interrelation between environmental and human security within the NATO context. While examining the CCMS project on "Road Safety" (1970-1974) by means of a knowledge-based approach to environmental history, it pays particular attention to the production of "human security" and the realization of an early CCMS "environmental security" concept – the former being interpreted in terms of today's United Nations concept which indicates a turn away from state-centered securitization towards new threats to "human security" such as crime, health, migration, poverty, unemployment etc. – and finally, environmental destruction.[11] In 2003, the *Commission on Human Security* (CHS) acknowledged that "people's security around the world is interlinked" and defined "human security" as an individual approach

> protecting people from critical and pervasive threats and situations, building on their strengths and aspirations [… by] creating systems that give people the building blocks of survival, dignity and livelihood […] It complements state security by being people-centered and addressing insecurities that have not been considered as state security threats. By looking at 'downside risks', it broadens the human development focus beyond 'growth with equity'.[12]

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[7]   von Uexküll 1909, 5.
[8]   Frédérick 1999.
[9]   Blaney 1973, 236; Kyba 1974, 256; Train 1974, 167; Sudarskis 1976, 69; Bungarten 1977; Krusewitz 1985, 33-47; Ditt 2003; Hünemörder 2004, 141-147; Humblin 2010, 54.
[10]  For example, Matthew 1999; Dyer 2001, 441; see also the contributions to the "17. Forum Globale Fragen" discussing the worldwide implications and risks of the global climate change: Auswärtiges Amt 2007.
[11]  United Nations Development Programme 1994, 22-40.
[12]  Commission on Human Security 2003.

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On the face of it, "human security" appears too vague to be of analytic value. However, international organizations such as the United Nations pursued the concept further and states such as Canada or Japan fell into line with it, which reflects a recent shift in social moral concepts and a rethinking of today's globally interconnected human security issues.[13] I argue that the first-generation projects of the CCMS already produced some decisive aspects of human security. This paper examines the way in which this production of security knowledge interlinked human with environmental security.

## "… *Are we prepared to see New York underwater?*" – CCMS Pioneers and the Environmental Crisis

The head of the West German CCMS delegation, the parliamentary secretary Ralf Dahrendorf, opened the first plenary session of the committee in December 1969 by stating that "the very fact that this Committee has been created shows that for us security depends as much on the vitality of our societies as it does on the strength of our armies."[14] Indeed, security was an intrinsic factor of CCMS considerations from the beginning, although NATO itself only used an extended security definition officially from 1991[15] and the first concrete CCMS study dealing with "Environment and Security in an International Context" did not appear until 1995.[16]

On closer examination, however, it becomes clear that the considerations of 1969 already foreshadowed the findings of the 1995 study. Since in 1969 the term "environment" was defined as social and natural human environment,[17] the predicted global environmental crisis was perceived as an urgent threat to the vitality of Western societies. Or, as the *NATO Information Service* argued in 1970:

> The survival of human society as we know it – perhaps the survival of Man himself as a species – is threatened now by a new factor: the rapid deterioration of the globe itself as an ecological system […] The world-wide ecological crisis (for crisis it is) has […] the components of potential breakdown.[18]

This NATO perception of the global ecological crisis as an uncertainty factor for mankind stems from one of the spiritual fathers of the CCMS – Nixon's

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[13] Daase 2009.
[14] "Statement by State Secretary Dahrendorf at the first Meeting of NATO Committee on Challenges of Modern Society on 8 December 1969 in Brussels", in United States Government Library of Congress, Washington D.C., Papers of Daniel Patrick Moynihan: Part I, Richard M. Nixon Administration, 1967-1972, Subject File, I:292.
[15] Ziegerer 1998, 33-35.
[16] Committee on the Challenges of Modern Society 1999.
[17] Concerning the contemporary perception of the environment as a social and natural issue, see also Uwe Lübken's paper in this volume.
[18] Huntley 1972, 11-12.

presidential counselor on urban questions and head of the US Delegation at the CCMS Preparatory Committee, Daniel Patrick Moynihan – the "number one 'Urbanologist' … in the White House".[19]

Moynihan was the driving force behind the CCMS, although his assessment of the CCMS's role and importance differed markedly from Henry Kissinger's approach to NATO's third dimension.[20] Kissinger perceived the environmental subject in the first place as a promising way to consolidate the transatlantic alliance.[21] Therefore, beyond all intentions to protect the environment, the CCMS was indeed a primary vehicle to achieve a cohesive transatlantic policy. In the face of France's withdrawal from NATO's military structures in 1966 and the credibility dilemma of NATO's leading member state USA,[22] at least the political cohesion was meant to be strengthened by the agreeable "soft politics" of the environment, "adding internal strength to our external security".[23]

Moynihan, in contrast, assessed NATO as the appropriate platform to fight the social and natural environmental problems of the industrialized nations.[24] In terms of world policy, he perceived the environmental question as one of the most urgent international political issues, although he acknowledged internally that the environmental issue did not have enough integrative power to keep the Atlantic Alliance alive without any military-political functions.[25]

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[19] Joseph Glazer, "An Urbanologist in the White House", in Bundesarchiv Koblenz, B 142-5009; "Daniel P. Moynihan, biographic Data", in "Behandlung von Umweltproblemen durch die NATO", September 1, 1969, in Bundesarchiv Koblenz, B 142-5009; Katzmann 1998, Appendix A: Biographical Facts Senator Daniel Patrick Moynihan, 181-195.

[20] Russel E. Train (EPA) to Henry Kissinger (Secretary of State), "Future of the NATO Committee on the Challenges of Modern Society", November 21, 1973 (confidential), in National Archives and Records Administration. General Records of the Department of State, RG 59, Political and Defense Files, 150-66/67-2899.

[21] Kissinger 1968; Memorandum Kissinger to Nixon, "Clarence Streit Letter on Atlantic Union", August 27, 1969, in National Archives and Records Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings Box 2.

[22] Haftendorn 1994; Nixon 1968, 805; "Die Zukunft der NATO" 1969, 46; Brosio 1967, D23.

[23] Department of State, "Memorandum for Mr. Henry A. Kissinger. Your Meeting with NATO Secretary General Manlio Brosio, July 3, 1969 / Briefing Memorandum", July 2, 1969 (secret), in National Archives and Records Administration. General Records of the Department of State, RG 59, Central Foreign Policy Files, 150-64/65-3160.

[24] Moynihan to Nixon, "Memorandum for the President: NATO Committee on the Challenges of Modern Society", September 16, 1969 (confidential), in National Archives and Records Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings, Box 3; Memorandum Moynihan to Nixon, "Report on CCMS", March 21, 1970, in National Archives and Records Administration. Nixon Presidential Material: The National Security Council (NSC), Central Files, NSC-CenFiles-312.

[25] Memorandum Moynihan to Nixon, "Report on CCMS", March 21, 1970, in National Archives and Records Administration. Nixon Presidential Material: The National Security Council (NSC), Central Files, NSC-CenFiles-312.

With regard to the CCMS's conception, papers of its *Preparatory Committee* (PrepCom) reveal that security aspects already played a prominent role in the creation of the new organization. In the PrepCom Moynihan defined as the challenges of modern society

> to protect individuals and society from the unheeded effects of technological change [, …] to minimize the harmful effects that arise from imperfect use of technological developments, to achieve a more effective use of technology and more human forms of complex systems to the end of extending welfare and freedom of individuals and strengthening the bases of world peace.[26]

He concluded that "the stability and well being of nations rests fundamentally on the success with which they face these challenges".[27] His statement formed the basis of the North Atlantic Council's report on the proposed CCMS. For the first time, the Americans cited concrete examples of this new type of environmental insecurity factor. As Moynihan wrote to Nixon:

> We pointed out that at the expected rate of release of carbon dioxide into the atmosphere by fossil fuels, the temperature of the atmosphere could rise 7 degrees by the year 2000. [...] Carbon dioxide has the same effect of glass in a green house [and ...] this [...] could raise the level of the sea by 10 feet. What then would become of London, Hamburg, Amsterdam, [and] New York?[28]

Essentially, he resumed some specific recommendations of the *President's Science Advisory Committee* of 1965, which had informed President Johnson that "marked changes in climate, not controllable through local or even national efforts"[29] could occur. In comparison, Moynihan created a more complex worst case scenario. The inversion of his arguments reveals that he expected social and political instability, deterioration of the quality of life and the environment and finally a threat to all world peace efforts.

In terms of the domestic environmental policies of NATO's members, this interdependence manifested a more complex dimension than conventional environmental efforts so far ever realized. The PrepCom assessed the environmental destruction as a global uncertainty factor concerning NATO's integrity – a theory the Western diplomats were confronted with for the first time.[30]

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[26] "Report of the Chairman on the Discussion in the Preparatory CCMS on Subjects which the CCMS might consider", September 16, 1969, in National Archives and Records Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings, Box 3.

[27] Ibid.

[28] Moynihan to Nixon, "Memorandum for the President: NATO Committee on the Challenges of Modern Society", September 16, 1969 (confidential), in National Archives and Records Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings, Box 3.

[29] President's Science Advisory Committee 1965, 9.

[30] Moynihan to Nixon, "Memorandum for the President: NATO Committee on the Challenges of Modern Society", September 16, 1969 (confidential), in National Archives and Records

Moreover, Moynihan already calculated costs resulting from environmental risks in comparison with the CCMS expenses. He summarized that the actions would cost a vast sum – but in the face of the environmental threat, capital spending appeared unavoidable: "If we conclude that the carbon dioxide projection is sound, are we prepared to see New York underwater?"[31] With this in mind, Moynihan worked along the same lines as scientists on both sides of the Atlantic, such as for instance Paul Ehrlich who was criticized in the US as a doomsday prophet because he discussed the global greenhouse effect[32] or Sir Frank Fraser Darling in the UK who explained the causal relationship between the environment, technology, and potential security threats to posterity.[33] Darling argued that it was a dangerous misconception that only later generations would have to deal with environmental problems. As Moynihan consulted Darling's results,[34] his CCMS concept assessed the critical environmental situation in a symptomatic way. In October 1969, he told the North Atlantic Assembly that the threat of a "nuclear holocaust" had been regarded so far as the ultimate disaster to humanity. But now "it has come to be perceived that this would be only the most spectacular of the fates that might await us. […] An ecological crisis is surely upon us; and developing at quite extraordinary rates."[35] As CCMS pioneers like Moynihan considered Western society and mankind as such to be endangered by the global environmental deterioration, the CCMS of 1969 expressed a programmatic shift from state to societal-based security, as Christopher Daase explains.[36] Therefore, the development of the CCMS shows vividly that society substituted the state as main security interest at the onset of the 1970s, gradually shifting in the dimension of space (from national to global level), danger (from threat to risk), point of reference (from state to society to the individual) and subject (military, economic, ecological and finally human security).[37]

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Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings, Box 3.

[31] Ibid.

[32] McCormick 1989, 69-73; Hünemörder 2004, 219-221.

[33] "Not with a bang but a Gasp", *The New York Times*, December 15, 1969; McCormick 1989, 129.

[34] "Remarks by Daniel P. Moynihan on the Committee on the Challenges of Modern Society", Brussels, December 8, 1969, in United States Government Library of Congress, Washington D.C., Papers of Daniel Patrick Moynihan: Part I, Richard M. Nixon Administration, 1967-1972, Subject File, I:292.

[35] "The NATO Committee on the Challenges of Modern Society. Address by Daniel P. Moynihan, North Atlantic Assembly", Brussels, October 21, 1969, in United States Government Library of Congress, Washington D.C., Papers of Daniel Patrick Moynihan: Part I, Richard M. Nixon Administration, 1967-1972, Subject File, I:292.

[36] See Christopher Daase's paper in this volume.

[37] Daase 2009, 138-149.

For all these reasons, security was an intrinsic factor of CCMS considerations. NATO's environmental concept already showed elements of environmental and human security being considered in the face of the environmental crisis. However, since we cannot take our present knowledge as a yardstick, it would be wrong to regard the CCMS concept as a matter of course. Images of destruction such as the "Deepwater Horizon" disaster or scientific reports on global warming were not established in the collective consciousness. Regarding the level of experience and science at the end of the 1960s, Moynihan did not present generally agreed facts – rather, he and other CCMS pioneers advanced a working hypothesis for NATO's environmental initiative. What Moynihan and the North Atlantic Council did was not to create or complete an environmental security paradigm. It was a thought process which aimed at the combination and investigation of environmental and security factors under NATO conditions. CCMS projects were to show to what extent environment and security really were interconnected and to combine technical, ecological, and social factors with the political courses of NATO's actions. In this respect, the Third Dimension was really a new political initiative which marked a period of transition in NATO's political strategy from conventional concepts of "peace" and "security" to an early form of environmental security.

## "… *Tens of thousands of scarce engineering man-hours*" – Road Safety Knowledge and the Production of "Human Security"

In 1970, eight CCMS projects started in a new type of pilot-copilot model on Disaster Relief (USA), Road Safety (USA), Air Pollution Control (USA), Open Water Pollution (Belgium), Inland Water Pollution (Canada), Work Satisfaction in a Technological Era (UK), Scientific Knowledge and Political Decision Making (FRG), and Regional Planning (France).[38] The pilots expected an extensive transatlantic environmental technology transfer. Almost every operation aimed at the exchange and development of environmental technology. The United States in particular attracted large technological projects, which promised economic and national benefits closing the apparent mutual American-European "technological gap" in the environmental field.[39] Business journals

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[38] Pilot nations of the CCMS projects are listed in brackets. If interested, one "pilot" nation took up a certain environmental problem and led a corresponding research project. Thus, the pilot was responsible for its planning, financial expenditure, organization and results. Within the project, "copilot" nations were able to establish subprojects on more concrete problems.

[39] "Examples for U.S. in meeting the 'Challenges of Modern Society'", February 2, 1970, in United States Government Library of Congress, Washington D.C., Papers of Daniel Patrick Moynihan: Part I, Richard M. Nixon Administration, 1967-1972, Subject File, I:292;

predicted expanding environmental technology markets while economists considered the environmental sector as the "next big industry".[40] Such technological innovation appeared only feasible in cooperation with national industries and companies. Thus, the CCMS projects gave American and European industry the opportunity to improve in the field of environmental engineering.[41] As the example of the Road Safety project illustrates, industrial science and engineering facilities became heavily involved in the CCMS research and technology exchange.

To analyze the scientific process of the CCMS and the production of security knowledge within its projects, this paper historicizes the sociological concept of "knowledge society" (*Wissensgesellschaft*).[42] The concept assumes that knowledge-based actions such as information processing, expert systems, and symbolic analysis permeated societal processes and relegated traditional factors of reproduction to the background.[43] The review of the Road Safety project pays special attention to the former aspect. According to the sociologist Nico Stehr, it was the growing significance of science after 1945 which enabled society to influence itself, its social institutions and its relations to the natural environment.[44] With regard to environmental history, critics have complained that this view was too euphoric about scientification and neglected "non-scientific knowledge" and its "non-professional producers" such as the environmental movement.[45] Nevertheless, since the CCMS projects were run exclusively by a group of scientists and experts, a historically reconsidered definition of Stehr's thesis is worthwhile. In the context of the CCMS, "knowledge-based" chiefly signified engineering and the natural sciences. Overall, as I

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Memorandum Dr. DuBridge to President Nixon, "The Technological Gap", February 19, 1969, in National Archives and Records Administration. Nixon Presidential Material: The National Security Council (NSC), Central Files, NSC-CenFiles-442; Memorandum Dr. DuBridge to President Nixon and Henry Kissinger, "Cooperation in Science and Technology with Europe", February 20, 1969, in National Archives and Records Administration. Nixon Presidential Material: The National Security Council (NSC), Central Files, NSC-CenFiles-442.

[40] "Gewinnchancen für eine bessere Umwelt", *Business Week*, April 11, 1970; Quinn 1971, 120.

[41] Foreign and Commonwealth Office/Science and Technology Department (Ronald Arculus), "NATO Committee on the Challenges of Modern Society: U.S. Study on Road Safety: Proposal on Air Bags (Passive Restraints Systems)", April 23, 1970, in Public Record Office, CAB 164-643: 42; Moynihan to Bundeskanzleramtschef Horst Ehmke, June 10, 1970, in: United States Government Library of Congress, Washington D.C., Papers of Daniel Patrick Moynihan: Part I, Richard M. Nixon Administration, 1967-1972, Subject File, I:292.

[42] Concerning the methodical advantages of the concept see Szöllösi-Janze 2004, 277, 310-313.

[43] Wilke 1998, 161.

[44] Stehr 1994, 220.

[45] Uekötter 2006, 102, 104-107; Uekötter 2006, 145, 147-148; with regard to scientification in the environmental field – especially concerning the "amateurish knowledge" of the environmental movement – compare Radkau 2002, 309.

argue, the Road Safety project produced a CCMS-specific environmental techno-science knowledge which dealt with security risks in traffic and mobility and defined individual human security for driving and, thus, living conditions.

The project on Road Safety[46] was once again the brainchild of Patrick Moynihan. Throughout the 1960s, he pursued a new approach to the subject, stating that "traffic accidents constitute one of the greatest, perhaps the greatest, of the nation's public health problems."[47] He criticized the American automobile industry and government for their reluctance towards an efficient road safety methodology. There was no relevant data available, nor had any scientific and technological projects been pushed ahead:

> The only moderately reliable statistic that exists is the number of persons killed […] It is hardly a complicated matter to conceive what basic national data ought to be collected: rates for deaths, injuries, and accidents; geographical and temporal distribution as such; types of vehicles involved; types of driver failure; types of vehicle failure; types of drivers involved; types of roadway and environmental failures […] To repeat: *none* of this data now exists, save the death rate.[48]

Moynihan advocated not only producing adequate cars but also developing traffic systems able to minimize potential accidents. In this respect, he raised the question of individual risk limitation and individual security in a technological society. With this in mind, he defined road safety, in the first place, as a scientific task and not only as a matter of bureaucracy.

However, NATO's road safety project went far beyond this projection. It aimed at the combination of automotive engineering, human and ecological factors as well as accident prevention and investigation to produce a "highly effective format … bringing all dimensions of the problem and their interrelationships into sharp focus."[49] In order to harmonize Western road safety standards, it intended that all interested states should be able to draw conclusions from a catalogue of technological insights.[50] This matrix consisted of six subprojects on (1) emergency medical services, (2) road hazards, (3) increasing use of seatbelts, (4) alcohol and driving, (4) passive restraints, (5) accident investigation and most importantly, (6) the development of an *Experimental Safety Vehicle*.[51]

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[46] Accredited by the North Atlantic Council in February 1970; see NATO Doc. C-R(70)5, February 13, 1970.
[47] Moynihan 1966, 10, quoted according to 20.
[48] Moynihan 1966; italics used in the original text.
[49] "Road Safety. Summary of proposed pilot study" 1970, 19; quoted according to 22.
[50] United States Department of Transportation, "US Pilot Study on Road Safety for the Committee on the Challenges of Modern Society. Proposed Agenda, Implementation and Working Plan", February 6, 1970, in Public Record Office, FCO 55-451: 2.
[51] Huntley 1971, 23-26.

Mobility and traffic are important parts of the anthropogenic environment. Consequently, it was not as peculiar as it seems at first sight that the CCMS developed traffic guidance systems, airbags or safety cars. Contemporary figures showed that in the United States 55,000 road deaths and 3.5 million injured persons were estimated in 1968 alone.[52] In 1965/66, the death toll from traffic accidents numbered 111,000 NATO-wide – almost as much as the losses suffered by the UN forces in the Korean War.[53] In addition to driving safety, the subprojects covered important environmental matters such as the development of a pollution-free car and better emission measurement technology. In this way, Road Safety was directed at reduced $CO_2$ emissions and less urban smog.[54]

The number of growing cooperation partners indicates that no major automotive nation wanted to miss the technology transfer within the project. The Europeans were particularly interested since the American *National Traffic and Motor Vehicle Safety Act* of 1966 set new motor vehicle safety standards in the US.[55] Car and motorbike manufacturers such as AMF, Ford, Fairchild Industries and General Motors (USA), Volkswagen, Mercedes-Benz, Opel, BMW and Porsche (FRG), British Leyland (UK), Fiat (Italy), Peugeot, Renault and Citroen (France), Nissan, Toyota and Honda (Japan) as well as Volvo and Saab (Sweden) worked in subprojects on safety measures, new kind of propulsion methods and *Experimental Safety Vehicle* prototypes (called ESV in the following). Road Safety turned out to be a big business investment: By 1974, the state and private capital investments for the ESV subproject itself amounted to 250 million US dollars.[56] The same year the project presented 13 different ESV variants, designed corresponding to mass production standards and the purchase interests of prospective buyers.[57]

International conferences, trade fairs and car exhibitions such as the Frankfurt *Internationale Automobil-Ausstellung* (IAA) (1970), the ESV conferences in Paris (1970), Stuttgart (1971), Washington, DC (merged with the transport fair "TRANSPO '72" (1972)) and Ann Harbor (1973) formed an extensive "space of automotive engineering knowledge".[58] Within this knowledge space, government officials, state facilities, non-governmental organizations and actors alike met and established a horizontal and vertical cooperation between national departments of transportation, federal agencies, car and insurance

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[52] "Road Safety. Summary of proposed pilot study" 1970, 19.

[53] Huntley 1971, 23.

[54] "NATO move to encourage pollution-free cars", *The London Times*, October 20, 1970.

[55] US want air bag safety at 85£ car", *The London Times*, July 8, 1968; "American safety laws criticized", *The London Times*, March 29, 1971.

[56] Blaney 1974, 236; Committee on the Challenges of Modern Society 1974, 5.

[57] Blaney 1974.

[58] The concept of "Wissensraum" (knowledge space) is interpreted according to Ash 2000, 235.

associations, independent and government-sponsored research institutes as well as research facilities of the world's most important car manufacturers.

Throughout the project, technical engineers of the car industry dominated the scenery and established an environmental knowledge concerning the style of the ESV. As a result, there was no competition between different scientific knowledge systems, but rather cooperation among the prevailing fields of the project. Up to 1977, the number of scientists, experts and government representatives integrated together in such CCMS projects increased to an annual average of more than 1,000 persons meeting at 30 conferences and workshops.[59] Within the projects, scientists and engineers established subject-specific communities and networks extending beyond the operations, as three former CCMS experts explained:

> During the pilot study, the 'community' of experts communicate directly with each other, often by telephone. These connections […] often continue even after the conclusion of the pilot study. […] The interaction within the scientific 'communities' is the real medium of reciprocal transmission of technology […] and it is the CCMS' greatest achievement and greatest success.[60]

Owing to these networks, the national boundaries set by the CCMS pilot model became blurred, and researchers and experts exchanged their views and results inside and outside "their" scientific community. In consequence, transnational collaborative company and research interconnections developed, for instance exchanging experiences on airbag or catalytic converter know-how.[61]

The Road Safety community obtained its knowledge mainly from experiments, for example crash tests and experimental emission measurements, as John A. Volpe explained:

> Auto design engineers […] have thrown themselves into the ESV task with unparalleled enthusiasm. Top company managements have unhesitatingly committed millions of dollars to the ESV program. They have allotted tens of thousands of scarce engineering man-hours to the project and have constructed and equipped extensive new test facilities. Governments have come to the support of these efforts by undertaking new research at government centers, as well as underwriting a great deal of private research.[62]

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[59] Özdas 1977, 20.

[60] Ward et al. 1980, 19; Paul von Ward was the US coordinator of the CCMS between 1977 and 1979; Glen Kendall und James Bresee collaborated on several CCMS US pilot projects.

[61] "US Car giants study anti-pollution system", *The London Times*, December 8, 1971; Foreign and Commonwealth Office/Science and Technology Department (Ronald Arculus), "NATO Committee on the Challenges of Modern Society: U.S. Study on Road Safety: Proposal on Air Bags (Passive Restraints Systems)", April 23, 1970, in Public Record Office, CAB 164-643: 42.

[62] John A. Volpe (Secretary of the United States Department of Transportation) on the occasion of the third ESV conference and international transport fair "TRANSPO '72" in Washington, DC, May 1972, in U.S. Department of Transportation 1972, 1-5.

The experiments of the "test facilities" formed the arsenal of information through which the CCMS experts legitimized "their" redefined environment before science, politics, and society.[63] While "scientists" produced new knowledge, "experts" reproduced it as a feasible subject. At the ESV conferences and car exhibitions, automobile and traffic experts made their technical knowledge available to an expertise-demanding clientele in politics, bureaucracy, industry and the media.[64] Because of their ability to transform the flood of information and data into scientific insights, products, and expertise, the automotive engineers and technical-administrative experts possessed a powerful knowledge of interpretation and orientation.

Road Safety experts coined the image of the technological as the "environmentally suitable" know-how. As this kind of environmental techno-science knowledge evolved in the course of the projects, the CCMS's idea of environmental protection shifted in line with market conditions towards a predominant technology-centered approach. For example, American, European, and Japanese engineers worked on the environmentally most suitable and most profitable propulsion method. They presented Catalytic converters and new types of propulsion such as turbine engines, electric and hybrid drives as well as a revised sterling engine.[65] The project's experts established the eco-friendly automobile as being market-conforming, announcing that "the 'clean car' of 1975 will also have to be a 'safe car'".[66]

Simultaneously, this CCMS techno-science redefined "environmental threats" as technologically controllable "environmental risks". Specific mechanisms of risk limitation were anticipated in a kind of a "safeguarding technology complex", closely corresponding to Ulrich Beck's sociological concept of "risk society" (*Risikogesellschaft*).[67] Although it is questioned by environmental historians for various reasons today,[68] some of its sociological ideas are still worthwhile in a historicized way.[69] According to Beck, environmental risks are basically invisible and based on causal interpretations. They are extremely dependent on experts' knowledge as they are influenced by social processes of definition.[70] In the case of the knowledge production within the CCMS projects, transatlantic researchers and experts dealt with regionally invisible envi-

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[63] According to Gooding 1989, 16.
[64] In general: Szöllösi-Janze 2004, 282; in the context of the Road Safety project: Huntley 1972, 25-26.
[65] Huntley 1972, 25-26; Train 1974, 177.
[66] Huntley 1972, 28.
[67] Beck 1986; for the latest definition of risk society see Schubert and Klein 2006.
[68] Engels 2006, 32; Brüggemeier 2006, 56.
[69] From a historical perspective, it rather encourages questions about historical safety philosophies, as Joachim Radkau suggested: Radkau 1999; Radkau 1990, 345, 357; Radkau 1989, 130.
[70] Beck 1986, 29-30.

ronmental risks such as the greenhouse effect or acid rain.[71] Besides these, visible risks such as road accidents appeared on the research agenda. Beck excluded "road accidents" from his analytical risk pattern, arguing that they are "attributable to the individual" and "chanced voluntarily".[72] However, the historical reality differed as the development of road safety represented a concrete attempt to control social risks of modern technology and society. Joachim Radkau correctly pointed out that the 20th century's rise of mass motorization in particular accepted social and individual risks to a high degree.[73] With this in mind, conventional automobiles and the extensive postwar highway networks – such as the one created by US town planners on the assumption of endless cheap fossil energy[74] – appeared as uncertainty factors to an increasingly mobile automotive society.

Against this backdrop, the Road Safety project created, in a bottom-up process, a post-modernist risk management of social and individual human mobility. Experts' reports and feasibility studies demonstrated technological prospects in the control of potential human security threats such as the "road accident". Therefore, the project exemplifies a process of professionalization, indicating that the 1970s' production of human security was still centralized in the hands of a few experts who generated and consolidated new realities in everyday life.[75] At the onset of the 1970s, this techno-science culture of environmental innovation participated in standardization and harmonization processes and thus influenced automobile design and culture. Whether it concerned airbags or seat belts, pedestrian protection devices or crash systems, catalytic converters or engine design – American and European car buyers of the 1970s and 1980s were confronted with a new kind of functionalist safety car design shaped by state legislation, scientific experts, consumer demands for safety and environmental features, and a new type of overall technological safety philosophy.[76]

# Conclusion

The analysis has shown that early CCMS pioneers such as Patrick Moynihan or Ralf Dahrendorf already anticipated present scientific and political environmental security discourses. Unlike other contemporary observers, they were in the position to formulate a first environmental security thesis for NATO's

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[71] US Secretary of State to all NATO Capitals, "US Précis for NATO/CCMS Air Pollution Pilot Study", December 5, 1969, in Public Record Office, CAB 164-642, 40P.
[72] Beck 1988, 266.
[73] Radkau 1989.
[74] McNeill 2005, 87.
[75] According to the "technological momentum" assumed by Hughes 1975, 358-384.
[76] Gartman 1994, 213-215.

environmental activities, which failed for two reasons: On the one hand, the prevailing mood within the Alliance towards the CCMS initiative was "responsive in principle but cautious in practice".[77] Important allies such as the United Kingdom were not enthusiastic about NATO's new third dimension for financial reasons, because of duplication of work with other international environmental organizations and conceivable political implications such as the impression of a bloc-to-bloc politicization within the environmental field.[78] Therefore, the CCMS focused its attention in a top-to-bottom process upon technological options rather than political grand designs. The nature of the Alliance was too restricted to provide political or scientific answers for global environmental problems.[79] On the other hand, assertive large-scale projects like the Road Safety project established a prevailing techno-science culture of environmental innovation which left its mark on the CCMS's objectives. The CCMS as such did not steer the "eco-technological policy line" all by itself. Rather, it was the knowledge production within the projects which developed an efficacious power of definition and promoted environmental technology only in a bottom-up process. Whether it was oil tanker design, disaster relief, contingency plans or air pollution control: At the end of the day, this power was so decisive that "the heart of the NATO CCMS programme was […] to stimulate a significant exchange of technology amongst a major group of industrialized nations of the world".[80]

Consequently, the CCMS projects of 1970 did not examine the global environmental security hypothesis projected in 1969. In a tacit understanding, all projects took a technological turn, leaving "environmental security" virtually aside. The Road Safety project demonstrates that the task of investigating environmental and security factors under NATO conditions very quickly turned into a technologically dominated leitmotif dealing with basic human and individual needs for security in a technological society. The activities established

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[77] Foreign and Commonwealth Office/Western Division to Cabinet Office, "NATO and Environmental Problems. Visit of the Secretary General on 26 June", June 23, 1969 (confidential), in Public Record Office, CAB 164-642, 12M.

[78] Foreign and Commonwealth Office to Prime Minister's Office, "Note for the Prime Minister on how Nato came to be involved in environmental problems – Nato and environmental problems", August 5, 1969 (confidential), in Public Record Office, CAB 164-642: 25; Moynihan to Nixon, "Memorandum for the President: NATO Committee on the Challenges of Modern Society", September 16, 1969 (confidential), in National Archives and Records Administration. Nixon Presidential Material: President's Office, President's Office Files, Handwritings, Box 3.

[79] Antoine 1973, 1-6; Sudarskis 1976, 71 on "Limits of the CCMS".

[80] Robert Brenner, scientific head of the US National Highway Traffic Safety Administration (NHTSA) at the fourth CCMS plenary session, Brussels, April 19-20, 1971, in: Committee on the Challenges of Modern Society, *Summary Record of a meeting held at the NATO Headquarters, Brussels, on 19th and 20th April, 1971*", NATO Doc. AC/274-R/7, July 23, 1971, in Bundesarchiv Koblenz, B 106-25901.

international and transnational bodies which produced specifically safeguarding knowledge and expertise in their field of research. If "technology" is defined as manufacture and application for a specific purpose, the project aimed at individual human security. It linked road safety to the security of the individual by exploring the environment from a technical perspective. Basic human needs such as the freedom to move were redefined in terms of a general technological safety philosophy. As a first major international organization dealing with road safety and individual security, NATO anticipated present human security discourses such as the United Nations Habitat "Global Report on Human Settlements 2007" which explicitly defines road safety as a human security issue while bringing together security and safety in one urban policy concept.[81]

In the face of the CCMS pioneers' ambitious vision, NATO's environmental committee nevertheless produced a sobering outcome. Although its projects indicated for the first time the complexity of "environmental security" and "human security", these two elements were not integrated into a political framework of action. Rather, the specialists of the CCMS provided *technical solutions* to environmental and security *policy problems*. Even if individual human security was considered, at no point did the CCMS projects develop an analytical pattern of environmental or human security combining technical, ecological, and social uncertainty factors and risks with political courses of action. Owing to this, NATO and its environmental projects did not develop any political structures or objectives of *acting* as a risk-orientated environmental alliance. Only at the end of the 1970s did NATO discuss that it had to bear in mind ecological, scientific-technological and social factors on a global and long-term basis.[82] However, as the Cold War heated up again, NATO's environmental dimension lost significance. Once more Western diplomats fought on familiar terrain and focused on military-political matters. It was not until the lifting of the Iron Curtain that NATO's policy-makers retrieved the environmental security dimension assumed by their predecessors and revived, unknowingly, Moynihan's idea of 1969 as an integral part of the Atlantic Alliance.

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[81] United Nations Human Settlements Programme (UN-Habitat) 2007.
[82] Cleveland 1978, 14.

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