DIFFERENT WAYS TO COMPARE TRAFFIC IN WESTERN AND EASTERN EUROPEAN COUNTRIES - A LITERATURE SCREENING FROM GERMANY AND A SHORT REFERENCE TO THE EUROPEAN PROJECT SARTRE, Ralf Risser

FACTUM

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1. Introduction

In the following, some papers - mainly German ones, and one about a European project - will be listed and shortly presented where traffic in some Eastern and some Western European countries has been described. One paper about China is included, as well.

2. The SATRE project[1]

To start with, a short resumee of the European project SARTRE is given. SARTRE was a survey done in the EU-countries plus (at that time) Czechoslovakia and Hungary. It dealt with risk perception, views on speeding, attitudes to drinking and driving, seat belt wearing and reported driving habits among drivers of these countries.

In the following table 1, the average over all countries is given, and is compared to the results from Chekoslovakia and Hungary. Moreover, the data allow to introduce results from former Eastern and former Western Germany in the table.

2.1 Chekoslovakian Drivers

The table shows that Czekoslovakian drivers, compared to all drivers, retain very rarely

- that driving too fast may be the cause of an accident,
- that vehicles that can be driven very fast are one cause for existing safety problems,
- that they themselves are safer drivers than the others,
- that they drive with too short distance to the car in front,
- that they drive against amber light often,
- and that they overtake with very narrow margins.

[1] SARTRE 1994, Social Attitudes to Road Traffic Risk in Europe. European Drivers and Traffic Safety, Presses Ponts et Chaussées

At the same time, they report by far the highest involvement in accidents of all countries involved.

2.2 Former Eastern Germany

Drivers from former Eastern Germany, on the other hand, express their opinion very often

- that vehicles that can be driven very fast are one cause for existing safety problems,
- that the performance of the car is a very important aspect
- that they themselves drive safer that other drivers,
- and that restrictions of speeds on the vehicle side would be important

Very few interviewees from former East Germany answer

- that they often speed
- that they drive faster than the others
- that they enjoy taking risks
- and that they are in favour of higher speed limits

Table 1: *Attitudes of drivers asked in the SATRE project (part 1)*

Question-naire variable Selected countries	„Driving too fast" seen as cause of an accident	Vehicles capable of driving too fast are seen as the problem	Other drivers infringe the speed-limit rules	Self-reported speeding	Drive faster than the others	Enjoy driving fast	Enjoy taking risks	Perfor-mance of the car is conside-red im-portant	Safer than other drivers
All	76,1%	56,2%	81,8%	19,4%	19,4%	36,6%	4,1%	34,2%	55,9%
Cz	*60,6*	*25,3*	80,0	16,9	17,0	41,6	6,9	43,0	*44,7*
De	**88,0**	**65,2**	86,3	*9,7*	*9,8*	42,6	*4,4*	**46,9**	**73,8**
Dw	78,7	64,0	*61,9*	12,1	12,1	**43,6**	5,5	36,8	58,9
H	71,1	55,8	**90,1**	**24,2**	**24,2**	*29,3*	**6,5**	*33,5*	59,7

Table 1: Attitudes of drivers asked in the SATRE project (part 2):

Questionnaire variable Selected countries	In favour of higher limits than 110 on rural roads	Restrictions of vehicle speeds on the vehicle side	Stated accident involvement last 3 years	Distance to vehicle in front often too short	Drives against amber traffic light often	Overtaking when one just can make it
All	6,44%	42,7%	0,112%	6%	16%	19%
Cz	6,35	31,8	*0,***409**	*3*	*13*	*10*
De	*1,87*	**42,5**	0,070	4	15	11
Dw	**8,42**	31,9	0,171	6	21	26
H	4,6	*20,0*	*0,053*	**11**	**31**	**39**

Total sample: A, B, Cz, Dk, DE, DW, E, F, GB, H, I, Irl, Nl, P, S, CH

2.3 Hungarian Drivers

Drivers from Hungary retain more often than drivers from other countries

- that many drivers infringe the speed limit rules
- that they themselves speed very often
- that they themselves drive faster than the others
- that they enjoy taking risks
- that speeds to vehicles in front often are too short
- that they often drive against amber traffic light
- and that they overtake when they just can make it

At the same time, drivers from Hungary say more rarely than many interviewed drivers from other European countries

- that they enjoy driving fast
- that the performance of the car is important
- and that there should be restrictions of vehicle speeds on the vehicle side.

Hungarian drivers report the lowest degree of accident involvement of all interviewed nations.

2.4 Drivers from former West Germany

Drivers from former West Germany are in general average with respect to their answer frequencies. Only in two cases are they „best": They state very often

- that they enjoy driving fast
- and that they are in favour of higher speed limits than 110 on rural roads.

At the same time, drivers from former West Germany express least often the opinion that other drivers infringe the speed limit rules.

2.5 Conclusion

These results can either be a basis for measures on the communicative level (campaigns) if no other data are available. However, much interpretation work is needed.

Or it can be the starting point for the definition of further research work, that makes use of, e.g., methods that are mentioned in the following.

3. Speeds in the „new countries"

The next summarised paper is the one of Lipphard in the Zeitschrift für Verkehrssicherheit (ZVS), the German „Journal of Traffic Safety"[2]. He refers to the „new countries", as the federal countries of former Eastern Germany are often called in Germany, precisely as the federal countries of former Western Germany are often called the „old countries".

3.1 Introduction

The speed behaviour of 285000 cars in former Eastern Germany has been analysed. The short-comings are that the analysis results are in some cases compared to nothing - neither in a before-after scheme, nor to other reference groups.

3.2 General neglection of speed limits

In total speed limits are neglected by more than half of the car drivers. 20% of the car drivers drive too fast on rural roads. At entrances into villages 90% drive faster than 50km/h, 30% drive faster than 70km/h. In town or village centers 1/3 drive faster than 60km/h, and a part of them faster than 70km/h.

[2] Lipphard D. 1994, Geschwindigkeiten in den neuen Bundesländern - Verhaltensänderungen 1991-1993. Neue Fahrbahnen, Ausstattung, Umfeld, ZVS 40, 4/IV

Table 2: % of cars and Lorries faster than 50km/h

Site	Cars faster than 50km/h	Lorries faster than 50km/h
town and village centers	45%	33%
entrances	87%	78%

3.3 Speed changes cfter surface reparations

Speed problems have arisen where the surface was changed, but where no work on the design was done.

Table 3: V85 before and after surface improvements

V85 of free cars on	before surface improvements	after surface improvements
Towns and cities	62	68
Rural roads	90	100

Speed went up drastically on streets with new surface (in average 15km/h in some samples).

On wet surface and under rain conditions speeds went in average up by 4km/h compared to dry surface.

On roads without repared surface from 1991 to 1993 speeds were reduced by 1 to 2km/h per year.

3.4 Other results

In East Germany there were general 80km/h on rural roads before the unification. Now it is 100km/h. On the remaining 80km/h pieces where signs have been put up speeds went down by 3-4km/h in average.

Mobile enforcement proved to be effective: In villages with mobile enforcement speed was reduced by 8km/h in average.

Alleys and parks roads go through do not reduce speeds. The figure shows that actually speeds on alleys are higher than on roads without trees near the road margin.

Picture 1: *V85 on alleys and parks roads go through*

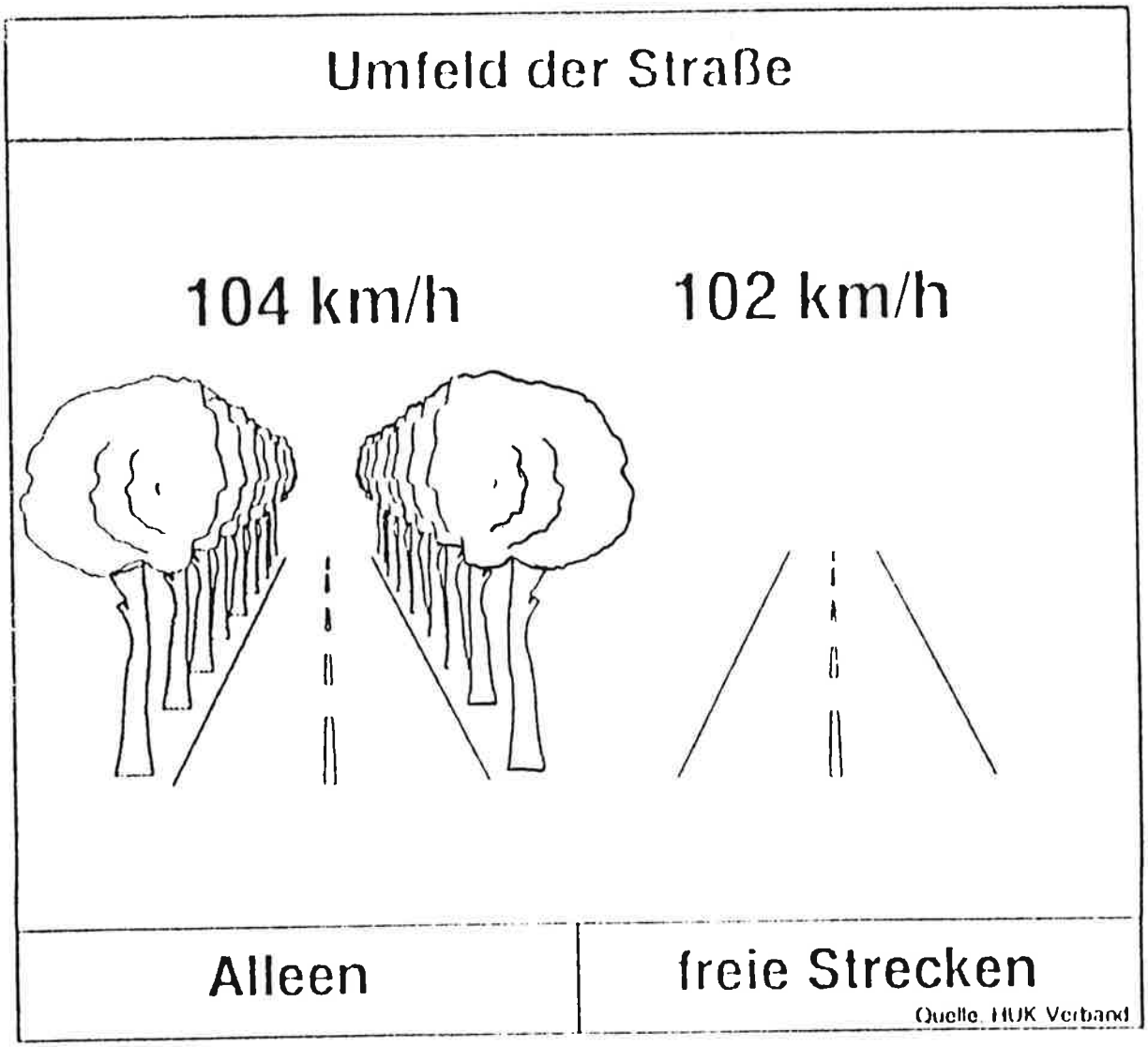


Bild 3: V85-Geschwindigkeiten von freifahrenden Pkw nach Straßenumfeld.

Males drive much faster than females, in villages 5km/h, on roral roads 10km/h. People in Western cars drive in average 10km/h faster than people in Eastern cars. At the same time, the portion of Western cars has been steadily rising:

Table 4: *Portion of Western cars 1991-1993*

Portion of Western cars	
1991	60%
1992	70%
1993	80%

However, there is no speed difference in towns or villages between Eastern and Western car makes.

Speeds by night are higher than daytime speeds:

Table 5: *V85 by night and daytime*

V85	
day	107
night	112

3.5 Conclusion

The results of the paper are interesting but of no great use if they are not compered to reference samples. Certainly, there exist, e.g., results from Western countries that can be compared to Lipphard's data. But actually, the author should himself have referred to these to some degree.

4. Life style analyses in the old and new countries[3]

Young drivers do not represent a uniform group. There are very different groupings which differ from one another in several characteristics. Life-style and leisure-time characteristics, attitudes and driving behaviour differ very much and at the same time show clear relationships to accident involvement.

[3] Schulze H. 1996, Lebensstil und Verkehrsverhalten junger Fahrer und Fahrerinnen, Berichte der Bundesanstalt für Straßenwesen (BASt), Heft 56

4.1 Life-style and leisure time analysis

Life style analyses are based on surveys of attitudes and values that prevail among certain groups. They usually lead to a division of these groups into sub-groups. In the following, some graphs are shown that contain the values and attitudinal objects referred to in life-style and leisure time analyses.

Such analyses are, among others, relevant because they give a thorough basis for communication policy towards different target groups (i.e., information and education campaigns).

In the old federal countries, three types where identified - the **action**, the **fan**, and the **contra-type** - which turned out to be High risk groups with extensive exposure and a higher accident involvement than other groups.

Graph 1: Cluster of „Action-Type"

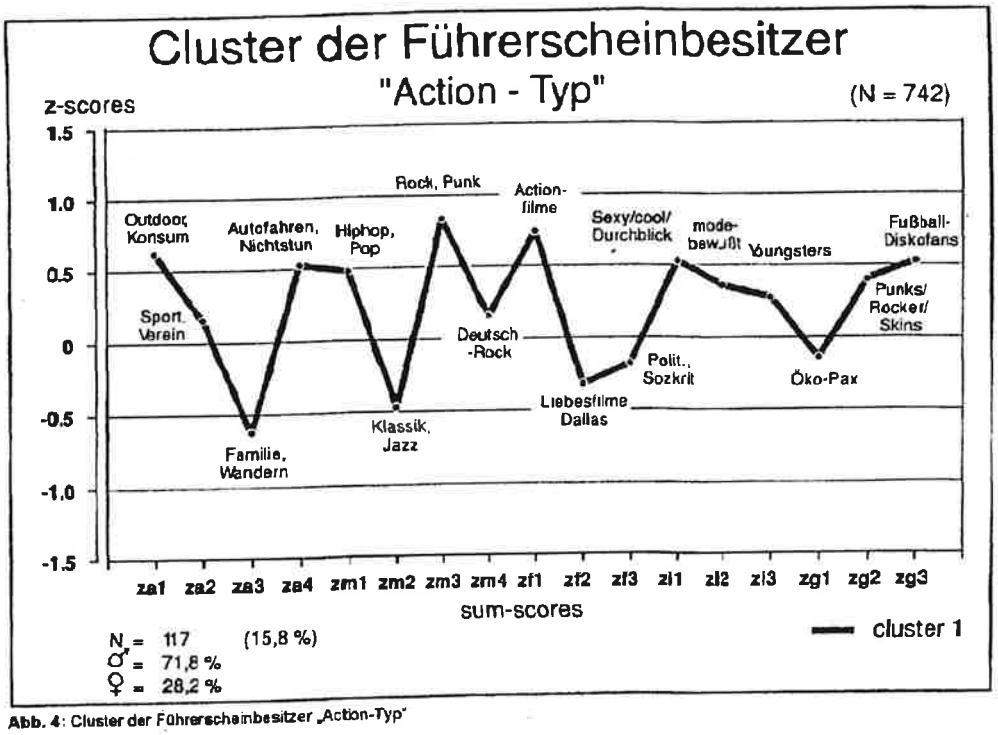


Abb. 4: Cluster der Führerscheinbesitzer „Action-Typ"

Graph 2: Cluster of „Fan-Type"

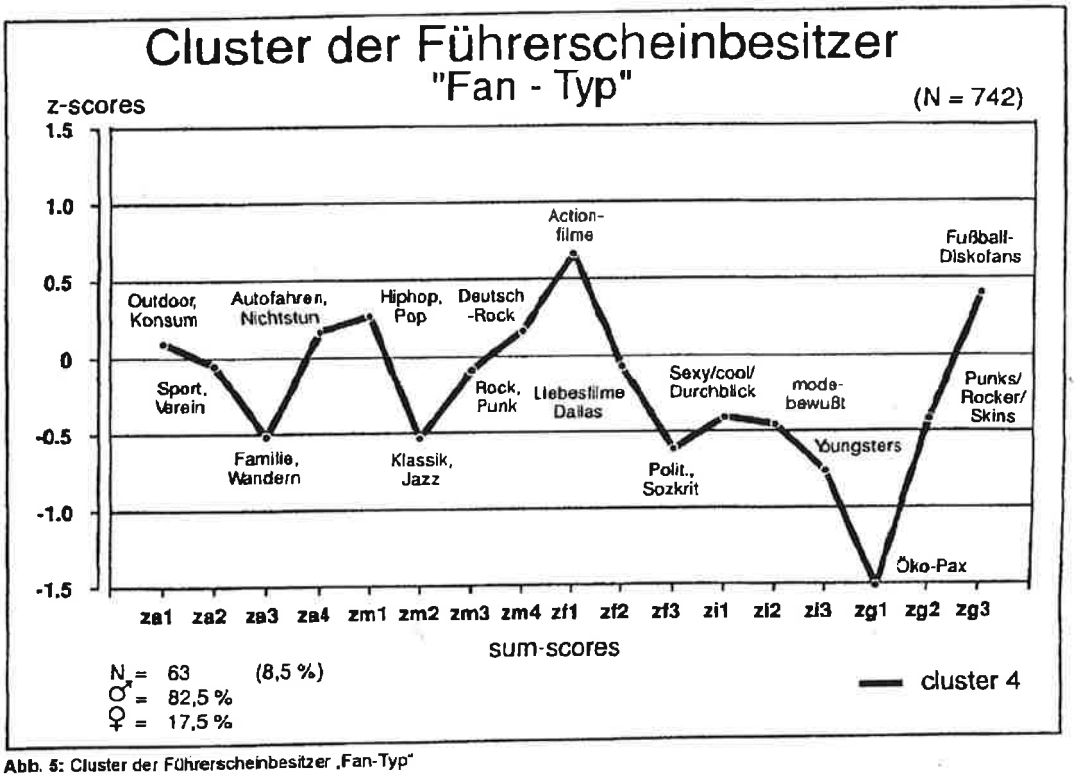
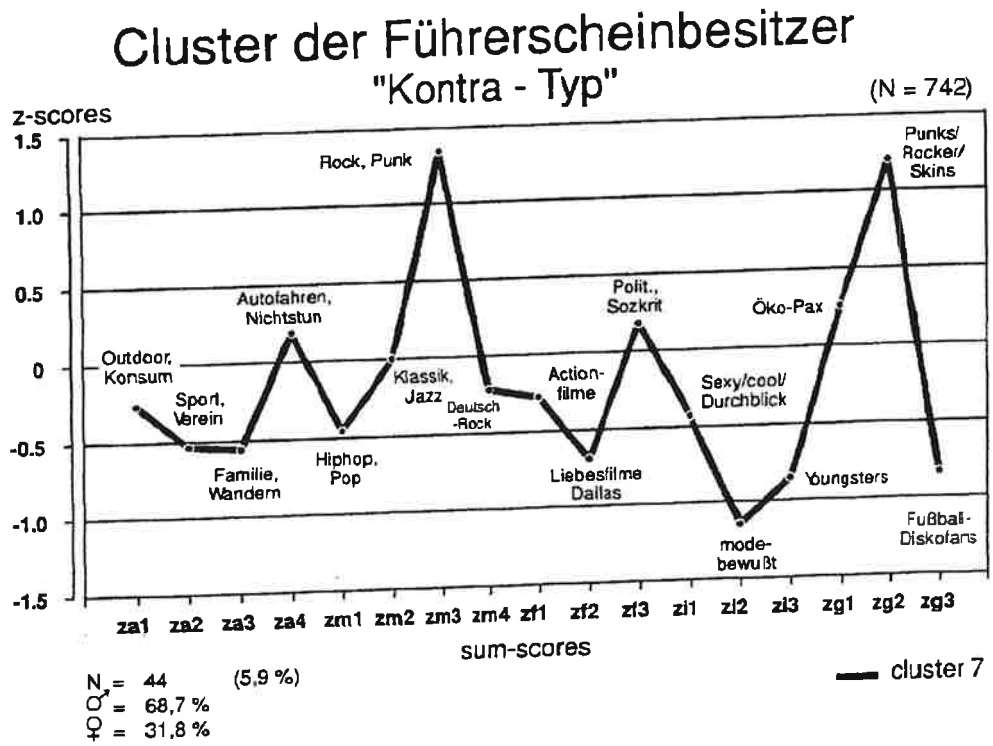


Abb. 5: Cluster der Führerscheinbesitzer „Fan-Typ"

Graph 3: Cluster of „Kontra-Type"

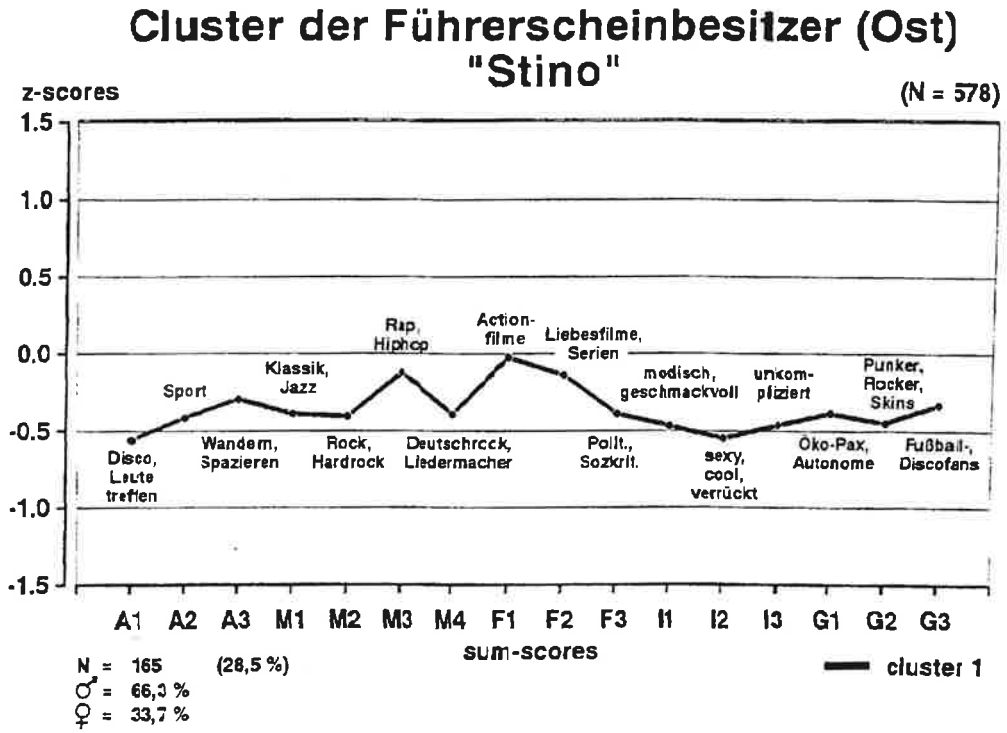


The following graphs show what values and what attitudinal objects are included in the life- and leisure style surveys:

These three problematic groups represent appr. 20 to 30% of all young drivers in the Western federal countries of Germany.

In the Eastern federal countries, the three most problematic groups are the „Stino" (very negative type), the „Dreher" (extroverted) and the „Easy rider" type (masculine hedonistic type.

Graph 4: Cluster of „Stino"



Both the problematic groups in the Eastern and Western federal countries are also difficult to be addressed. In the Eastern countries it seems even more difficult as there are virtually no high loads on any positive values. At the same time, the problematic groups in the Eastern federal countries represent around 60% of the young drivers:

Graph 5: Cluster of Dreher"

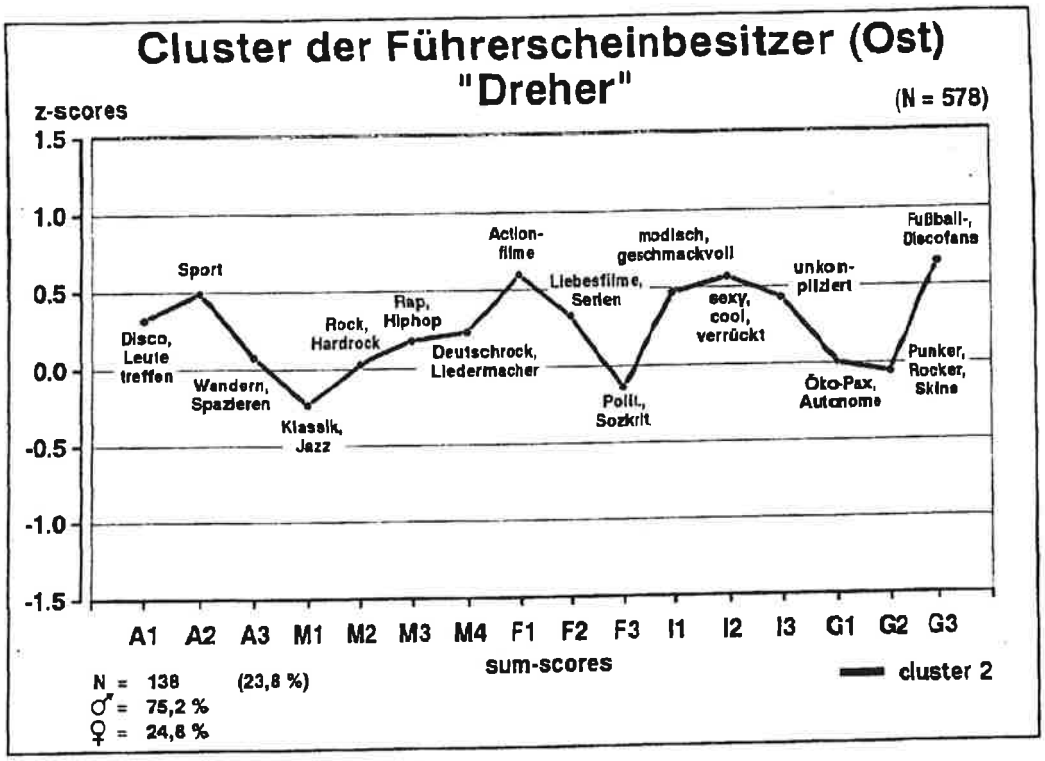


Abb. 17: Cluster der Führerscheinbesitzer (Ost) „Dreher"

Graph 6: Cluster of „Easy Rider"

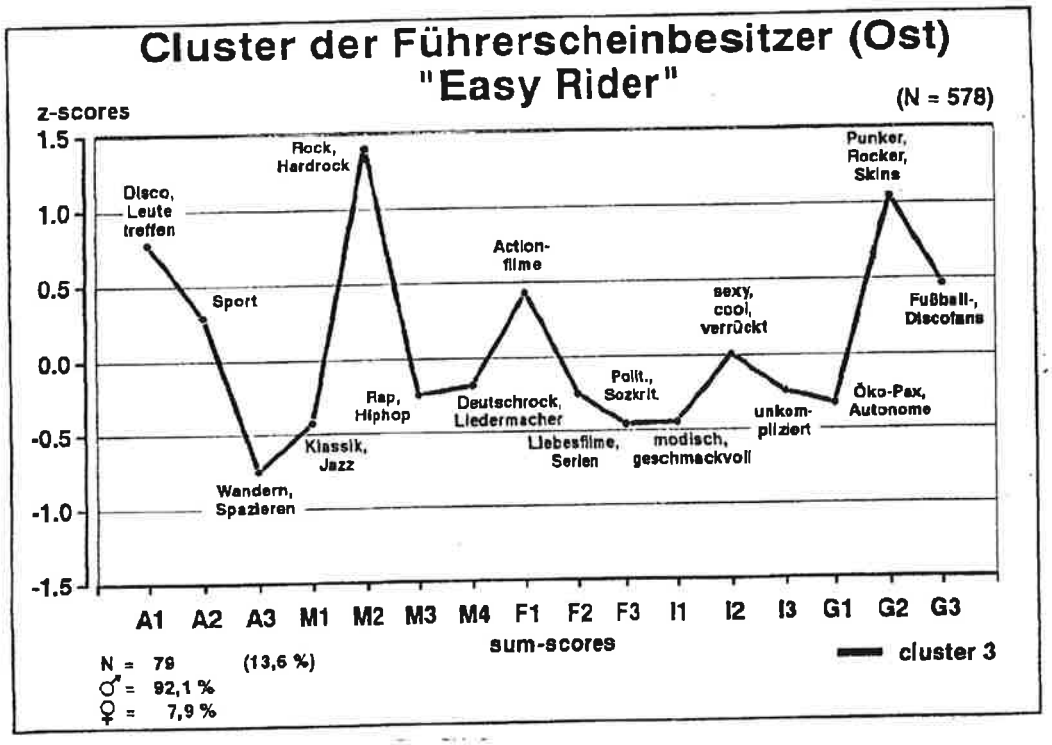


Table 6: Percentage of problematic groups

Western Federal countries	**Eastern federal countries**
Problematic groups: Fan-, Action-, and Contra.type 20 to 30%	Problematic groups: Stino-, Dreher-, and Easy-rider-type appr. 60% (28, 24 and 14)

5. Test drives in Germany

Test drives were organised by Reker[4] et al. near Berlin, 1991 and 1992. The main variables that were checked were speeds and changes in speeds on test routes by three groups: Persons from the old federal countries (A), people from the new federal countries (N), and prople from the new federal countries with a new car of Western make (U)

[4] Reker K., Buss E. & Zwielich F. 1993, Fahrverhaltensbeobachtung im Raum Berlin, Berichte der Bundesanstalt für Straßenwesen

Table 7: Comparison between the three groups with respect to different variables:

	A	N	U
Accelerations and decelerations in inhabited areas		Slightly faster than the other groups	More than the other groups
Rural roads without housing		Significantly faster than A	Significantly faster than A
Motorways	As U, faster than N	Slower than A + U	As A, faster than N
Acceptance of time gaps at crossings		Accept shorter time gaps than A and N	
Interaction with vulnerable road users	Reduce speed continuously from 100 to 20 m	Do not reduce speed at all	Reduce speed continuously from 100 to 50 m
Norm orientation		Higher norm orientation than the other 2 groups	

Between the three groups there are no differences on urban main streets, and no differences on rural roads with housing.

Infrastructural elements (road surface characteristics, road paintings, etc.), do not differ in their effects on the three groups.

6. A comparison between PRC and Germany (old federal countries)

Very shortly, a paper by Liu[5] shall be summarised here that has been published in the ZVS, as well.

In the following table, the accident quotients that refer to death per inhabitants, death per vehicles, and a factor b are displayed. The latter refers to numbers of vehicles, inhabitants and driven kilometers (which in China are assessed).

[5] Liu Y. 1996, Vergleich der Straßenverkehrssicherheit zwischen der Volksrepublik China und der alten Bundesrepublik Deutschland, ZVS 40, 4/IV

Table 8: Comparison of PRC and old fedural countries

	Death/10^5 Inh.	Death/10^4 vehicles	b
Ger: 1970	31,64	11,13	0,301
Ger: 1975	24,05	6,99	0,383
Ger: 1976	24,09	6,62	0,394
Ger: 1977	24,39	6,32	0,399
Ger: 1978	23,91	5,85	0,413
Ger: 1979	21,55	5,04	0,446
Ger: 1980	21,18	4,83	0,457
Ger: 1990	12,39	2,21	0,627
PRC: 1990	4,65	52,49	0,407

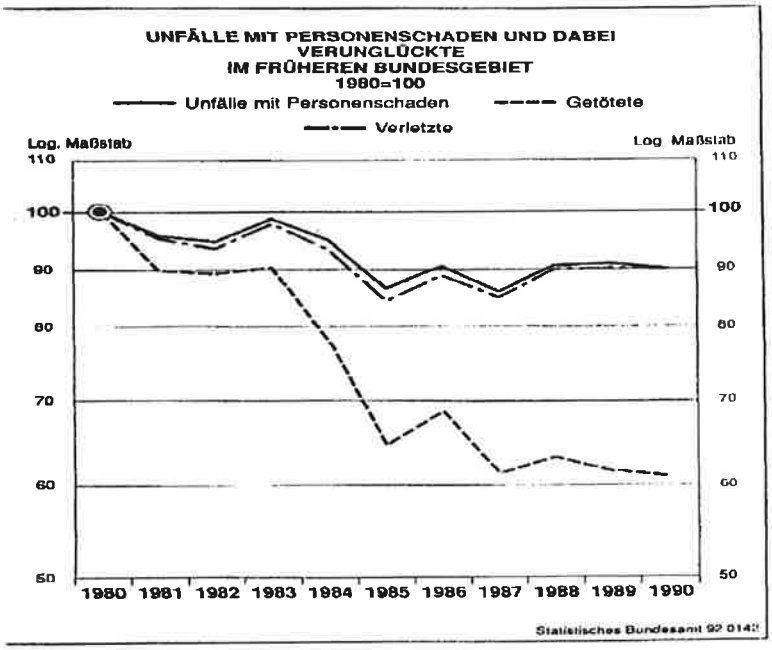
The conclusion of Liu is that the traffic safety standard in the People's Republic of China 1990 is comparable to the one in Germany (old federal countries) in the years 1977/1978.

7. Accident statistics of the DVR6

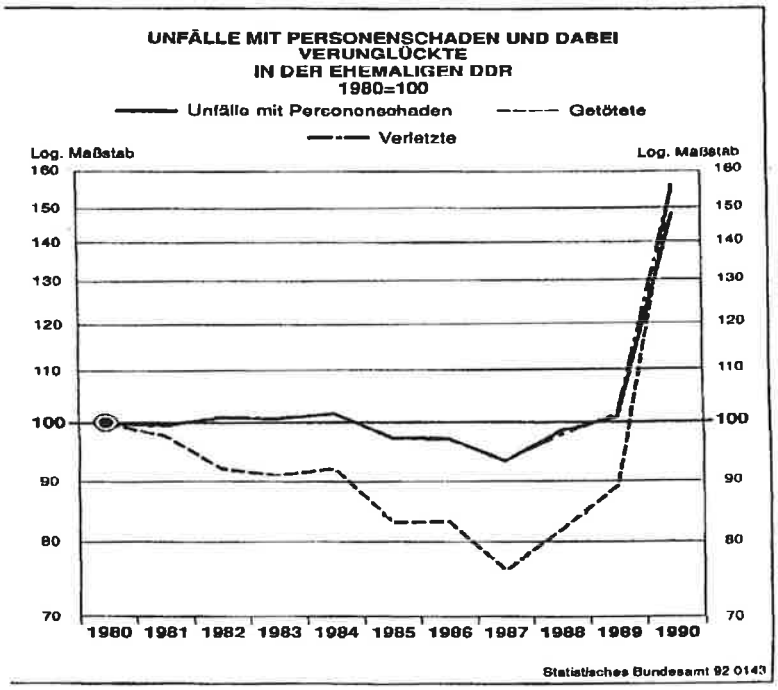
To finish with, two graphs are presented that show the development of accident numbers both in the old and in the new federal countries:

[6] Deutscher Verkehrssicherheits-Rat DVR 1992, Unfallverhütungsbericht Straßenverkehr 1991. Bericht des Bundesministers für Verkehr über Maßnahmen auf dem Gebiet der Unfallverhütung im Straßenverkehr für die Jahre 1990 und 1991; Übersicht Rettungswesen, DVR Drucksache 12/3102

Graph 7: *Accident rates, injured and killed persons in former West Germany*



Graph 8: *Accident rates, injured and killed persons in former East Germany*



The results show a very clear difference in the development in former East Germany and former West Germany.

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