The Korean Public's Impressions of the SET (Scientist-Engineer-Technician)

by

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1. Potential Impact of the Scientist's Image

1) Influence on Youth's Entry into the Scientist's Profession.

2) Formation of the Scientist's Identity.

3) Formation of the Scientist's Social Status.

4) Gain of the General Public's Support.

5) Influence on the Scientist's Professional Morale.

2. Major Research of the Scientist's Image

1) Mead & M?raux (1957): Intelligent but unsocial.

2) Chambers (1983): DAST--White gown, spectacles, beard.

3) Sjøberg (1999): Crazy vs. heroic.

3. Conceptualization of Image vs. Impression

1) Image: Full information-processing, rational, (value) residue.

2) Impression: Significant value and/or nonvalue.

3) Carter's Cognigraphics (1992, 1993): Elements and their relationships(Appendix) of impression.

4. Research Questions

1) What are the Korean public's impressions and the SET's

own impressions of the SET?

2) Specify what they like or dislike, regarding the SET?

3) What kinds of media coverage do they expose themselves to or pay attention to, regarding the SET?

4) What are their evaluations of the SET profession relative to other professions?

5. Survey Methods

1) The general public (1200 adults): National stratified area sampling.

2) 206 SETs: Cluster sampling of Seoul Metropolitan area and Daeduk Science Park.

3) Face-to-face interview.

6. Major Results

<Table 1> Elements of Impressions re the SET

(Q: What is the first word that comes to your mind when you hear the SET word?)

Class	Category	Sub-Cate.	Elements	Public (%)	SET(%)
SET Activity	Activity		Research/Experiment, Study/Effort, Think/Idea	16.4%	23.8%
	Activity Tool		Spectacles/Gown, Test tube/Beaker, Lab./office	4.0%	8.3%
	Activity evaluation	Positive eval.	Needful/Useful, Special/Proud, graceful, Opportunity/Promising, Freedom	3.6%	5.2%

		Negative eval.	Dislikable, Headache/Hard/Painful, Tough/Dull, Worker/Labor, Simple/Monotonous, Unhealthy/All-night work, Family-breaking	2.8%	4.7%
Human trait	Common traits necessary for activity		Professional/High-grade manpower, High education/Overseas training, Creativity, Intelligentsia/Elite, Knoweledgeable/Learned	5.8%	9.8%
	Human evaluation	Positive eval.	Elegant/Clean/Tidy, Good, Great/Able, Trusty/Credible, Bold/Unusual, Smart/Brilliant, Respectable/Excellent, Rational/Logical/Objective, Pure/Dry, Precise/Thorough/Perfect, Progressive, Altruistic	14.5%	5.7%
		Negative eval.	Egoistic/Individualistic, Dislikable/Tiring, Distant/Strange, Dull/Foolish, Cold, Meek, Calculating, Narrow, Incapable/Lazy, Authoritative, Dogmatic, Nervous, Political, Untidy, Lilar/Hypocrtitical, Commercial,	2.0%	2.6%
Names of Profession			Teacher/Professor, Ph.D./Scholar, Laborer/Worker, Scientist/Engineer,	4.5%	5.7%
Personality	Renowned		Einstein, Edison, Yong-Shil Chang	8.4%	4.7%
	Acquaintance		Family, Relative	.6%	-
Institution			KAIST, NASA, Science High School, Univ.	5.8%	1.6%
Activity Field	General		Science/Technology, Engineering/Natural Sciences	2.4%	6.2%
	Specific		Space Science, Biology/Bioscience, Physics/Mathematics/Chemistry, Interior, Military	5.6%	3.1%
Accomplisb ment/Achie vement	Technological		High tech., Computer/Internet, Robot, Rocket/Missile, Mechanic, Satellite, Semi-conductor/New material, Nuclear/Atomic bomb, Gene, Car/Airplane, electric home appliances/PCS, electricity, Medical & pharmaceutical developments	16.2%	9.3%
	General	Positive evaluation	Quality of life/Convenient/Useful, Developed Country/National development, Contribution to Society	4.4%	4.1%
		Negative elaluation	Natural destruction/Pollution, Unethical/Immoral, Damage/Destructiveness, Making life desolate	.1%	-
		Other	Industrialization	.3%	1.0%
Economic condition		Rich	High salary/Rich person	.6%	.5%
		Poor	Poor, Low salary, Low treatment	.1%	1.6%
Other				2.0%	2.1%
Sum	**1077 adults; 193 SETs**			100.0%	100.0%

<Table 2> Relationships of the Korean Public's Impressions re the SET

(Q: In which type of relationships do you think of your first word in relation to the SET?)

Types Of Elements	Types of relat.*	1	2	3	4	5	6	Sum
Acitivities	Freq.	66	16	36	19	39	1	177
	%	37.3%	9.0%	20.3%	10.7%	22.0%	.6%	100.0%
Acitivity tool	Freq.	26	5	8		4		43
	%	60.5%	11.6%	18.6%		9.3%		100%
Acivity--Positive evaluation	Freq.	7	12	13	4	3		39
	%	17.9%	30.8%	33.3%	10.3%	7.7%		100%
Activity--Negative evaluation	Freq.	19	3	5		3		30
	%	63.7%	10.0%	16.7%		10.0%		100.0%
Human common trait	Freq.	27	15	5	2	13		62
	%	43.5%	24.2%	8.1%	3.2%	21.0%		100.0%
Human positive evaluation	Freq.	85	33	5	8	24	1	156
	%	54.5%	21.2%	3.2%	5.1%	15.4%	.6%	100.0%
Human negative evaluation	Freq.	10	5	2		5		22
	%	45.5%	22.7%	9.1%		22.7%		100.0%
Technological accomplishment	Freq.	39	12	90	10	23	1	175
	%	22.3%	6.9%	51.4%	5.7%	13.1%	.6%	100.0%
General positive accomplishment	Freq.	6	8	27		5	1	47
	%	12.8%	17.0%	57.4%		10.6%	2.1%	100.0%
General negative accomplishment	Freq.			1				1
	%			100%				100.0%
Other	Freq.			2		1		3
	%			66.7%		33.3%		100.0%

*Types of Relationships: See the Appendix.

<Table 3> Relationships of the SETs' own impressions re the SET

(Q: In which type of relationships do you think of your first word in relation to the SET?)

Types **Types** of Elements Of relat.*		1	2	3	4	5	6	Sum
Acitivity	Freq.	15	10	8	3	10		46
	%	32.6%	21.7%	17.4%	6.5%	21.7%		100.0
Acitivity tool	Freq.	9	2	1	1	2	1	16
	%	56.3%	12.5%	6.3%	6.3%	12.5%	6.3%	100%
Activity-- Positive eval.	Freq.	1	3	2	2	2		10
	%	10.3%	30.0%	20.0	20.0%	20.0%		100%
Activity-- Negative eval.	Freq.	4	1			4		9
	%	44.4%	10.0%			44.4%		100.0%
Human common trait	Freq.	8	6	2		3		19
	%	42.1%	31.6%	10.5%		15.8%		100.0%
Human positive eval.	Freq.	8	2			1		11
	%	72.7%	18.2%			9.1%		100.0%
Human negative eval.	Freq.	5						5
	%	100.0 %						100.0%
Technological accomplishment	Freq.	5		6	2	5		18
	%	27.8%		33.3%	11.1%	27.8%		100.0%
General positive accom.	Freq.	1	3	3		1		8
	%	12.5%	37.5%	37.5%		12.5%		100.0%
General nega. accom.	Freq.							
	%							
Other	Freq.	1		1				2
	%	50.%		50.0%				100.0%

*Types of Relationships: See the Appendix.

<Table 4> The General Public's Affective Elements re the SET

[Unit: Frequency(%)]

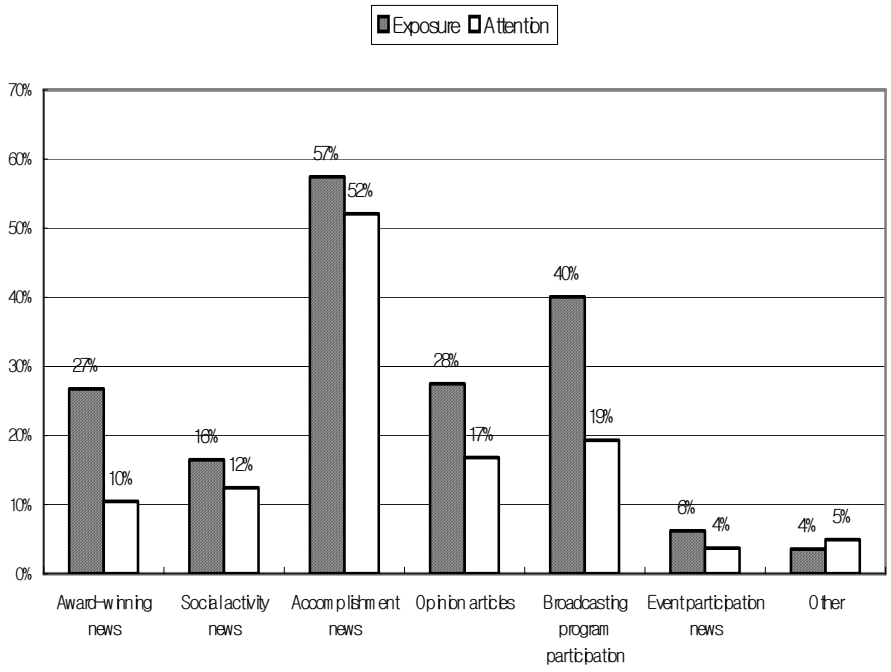
Types \ Distribution	Likable elements	Distlikable elements	Elements of Impression
Activity	152(22.0)	9(2.4)	177(16.4)
Activity tool	0	0	43(4.0)
Activity--Positive evaluation	60(8.7)	0	39(3.6)
Activity--Negative evaluation	0	45(12.0)	30(2.8)
Human common trait	51(7.4)	4(1.1)	62(5.8)
Human positive evaluation	161(23.3)	0	156(14.5)
Human negative evaluation	0	207(55.0)	22(2.0)
Name of profession	0	0	49(4.5)
Personality	0	1(0.3)	96(8.9)
Institution	0	0	62(5.8)
General activity field	5(0.7)	0	26(2.4)
Specific activity field	1(0.1)	2(0.5)	60(5.6)
Technological accomplishment	5(0.7)	34(9.0)	175(16.2)
General positive accomplishment	250(36.1)	0	47(4.4)
General negative accomplishment	0	66(17.5)	4(0.4)
Economic condition	7(1.0)	7(1.9)	7(0.6)
Other	0	1(0.3)	22(2.0)
Sum	692(100%)	376(100%)	1077(100%)

<Table 5> The SETs' Affective Elements re the SET

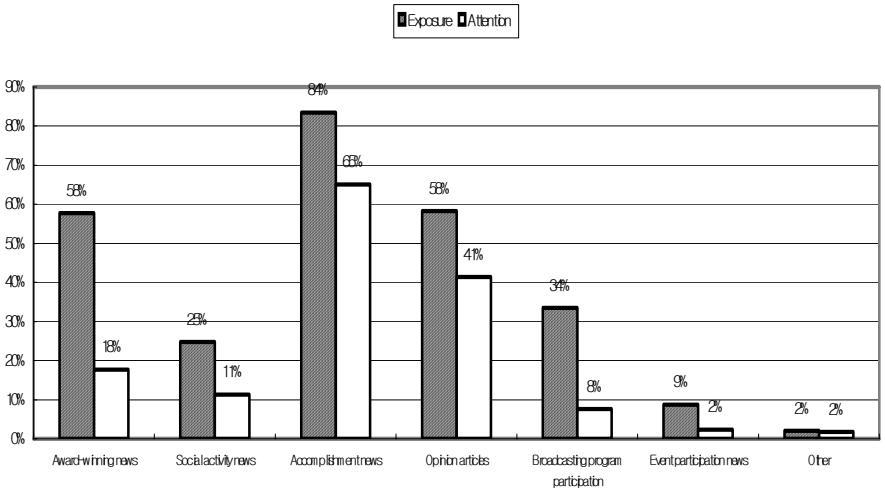
[Unit: Frequency(%)]

Types \ Distribution	Likable elements	Dislikable elements	Elements of impression
Activity	28(20.7)	0	46(23.8)
Activity tool	0	0	16(8.3)
Activity--Positive evaluation	26(19.3)	1(0.8)	10(5.2)
Activity--Negative evaluation	0	17(14.4)	9(4.7)
Human common trait	10(7.4)	2(1.7)	19(9.8)
Human positive evaluation	55(40.7)	0	11(5.7)
Human negative evaluation	0	66(55.9)	5(2.6)
Name of profession	0	0	11(5.7)
Personality	0	0	9(4.7)
Institution	0	0	3(1.5)
General activity field	0	0	12(6.2)
Specific activity field	0	0	6(3.1)
Technological accomplishment	0	3(2.5)	18(9.3)
General positive accomplishment	16(11.8)	0	8(4.1)
General negative accomplishment	0	7(5.9)	2(1.0)
Economic condition	0	11(9.3)	4(2.1)
Other	0	11(9.3)	4(2.1)
Sum	135(100%)	118(100%)	193(100%)

<Figure 1> Types of Media Coverage for the Public's Exposure and Attention to the SET (multiple responses)

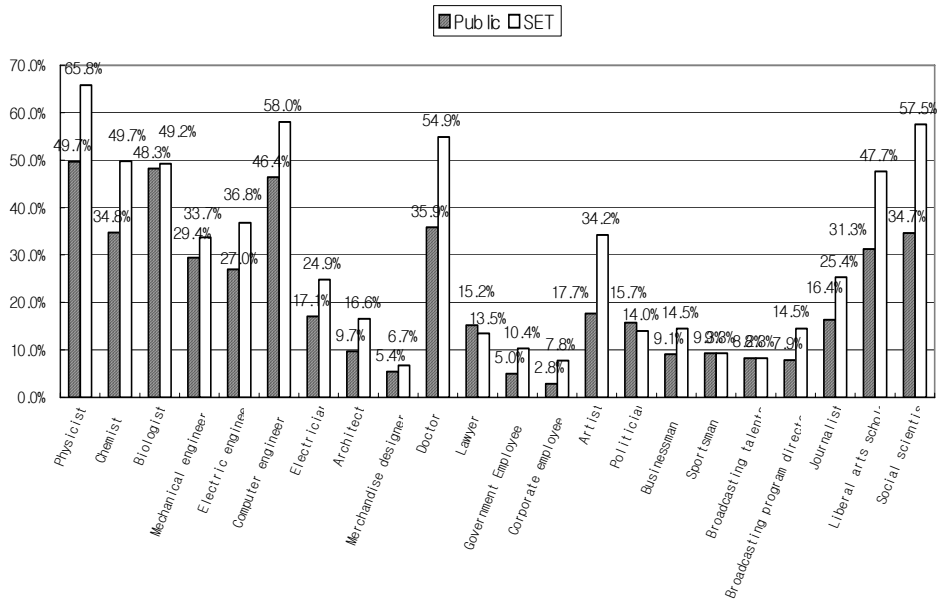


<Figure 2> Types of Media Coverage for the SETs' Exposure and Attention to the SET (multiple responses)

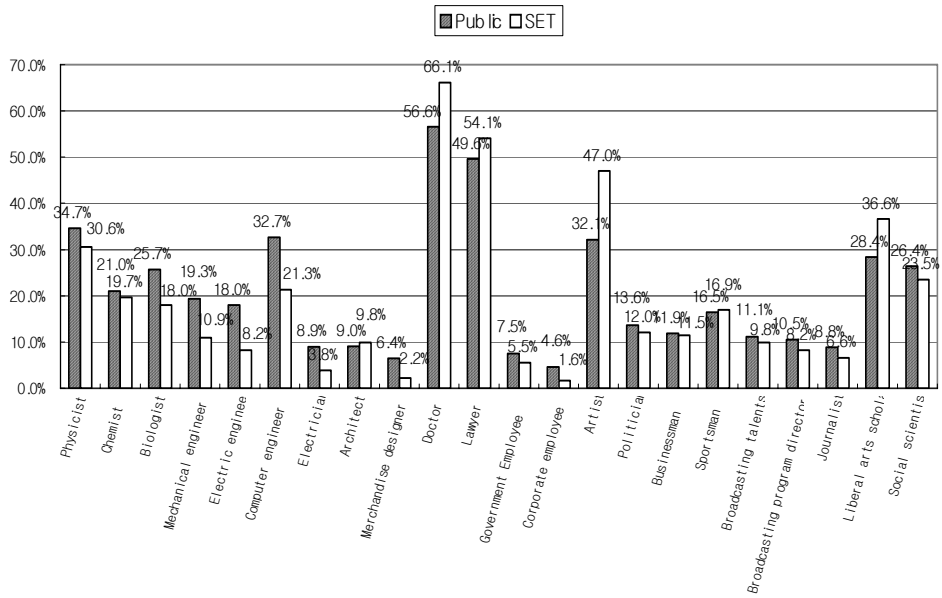


<Figure 3> Profession of Contributing to the World Problem-Solving

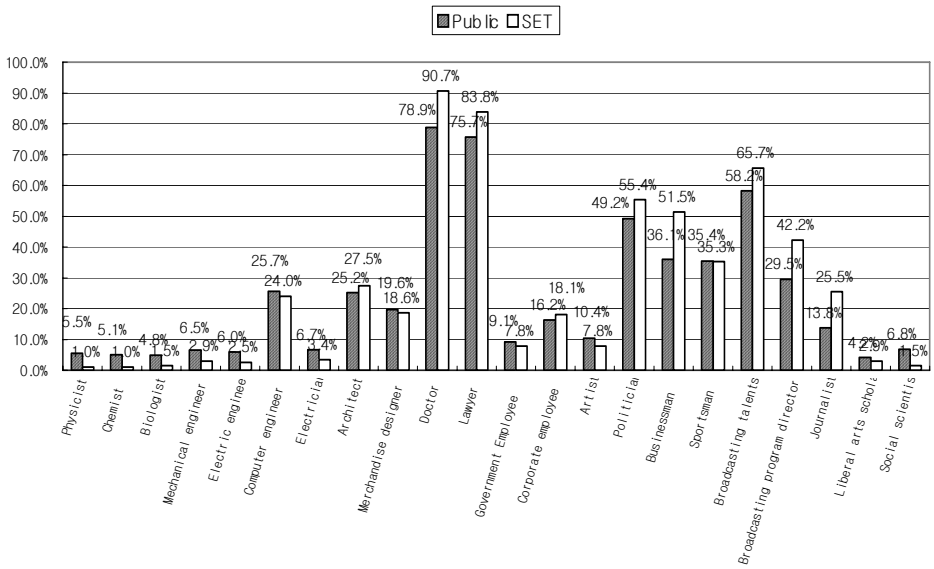
(multiple responses)



<Figure 4> Profession of High Social Prestige (multiple responses)



<Figure 5> Profession of High Economic Treatment (multiple responses)



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1. Carter, R. F., "Cognigraphics: Taking the Measure of Ideas", paper presented at the annual meeting,

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2. Carter, R. F. and K. R. Stamm, "How We Thought about the Gulf War", in B. L. Greenburg and W. Gantz(eds.), *Desert Storm and the Mass Media* (pp. 152-165), Cresskill, NJ: Hampton Press, 1993.

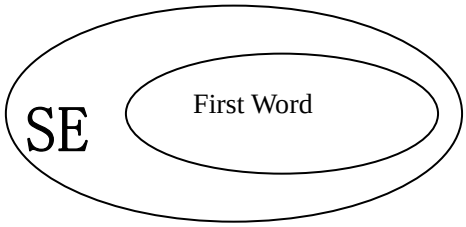
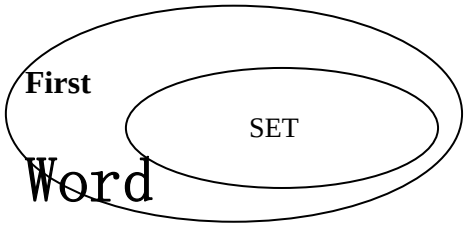
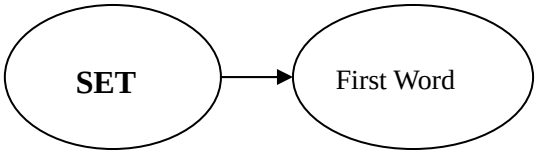
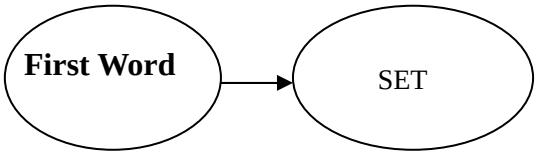
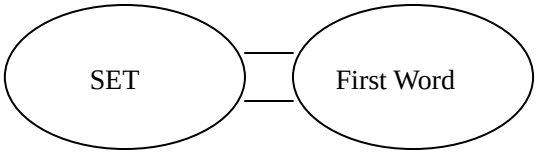
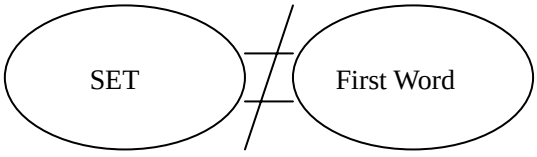
3. Chambers, D. W., "Stereotypic Images of the Scientist: The Draw-A-Scientist Test," *Science Education, Vol. 67*, No. 2, 1983, pp. 255-265.

4. Kim, Hak-Soo, 감mpressions of the SET(Scientist-Engineer-Technician): A National Survey Analysis," *Journal of Technology Innovation, Vol. 8*, No. 1, August 2000, pp. 95-123.

5. Mead, M. and R. M?raux, "Image of the Scientist among High-School Students," *Science, Vol. 126*, No. 3270, 30 August 1957, pp. 384-390.

6. Sjøberg, S., "The SAS-Study: Science and Scientists, Cross-Cultural Evidence and Perspectives on Pupil's Interests, Experiences and Perceptions," a preliminary report on the project Science and Scientists(SAS), University of Oslo, Norway, 1999.

<Appendix> Six Types of Relationships in Impression

Types	Examples
	- First word(FW) is an attribute of the SET. - FW is an example of SET. - FW is included in the SET.
	- SET is an attribute of FW. - SET is an example of FW. - SET is included in the FW.
	- SET is necessary to FW. - Without SET, there is no FW. - SET produces FW.
	- FW is necessary to SET. - Without FW, there is no SET. - FW produces SET.
	- SET is equal to FW. - SET is similar to FW. - Without FW, nothing occurs to me regarding SET.
	- SET is the opposite of FW. - SET is different from FW. - SET is not related to FW.