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SOCIAL CONSTRUCTION OF “AVOIDANCE OF S&T” AND THE KOREAN SCIENTIFIC COMMUNITY

Eun Kyoung Lee
CHONBUK National University, Korea

Abstract

This paper analyzes the socially constructing process of “avoidance of S&T” throughout 2002 in Korea, and argues that the Korean S&T community is not homogeneous and consists of many subgroups with different interest. The discourse of "avoidance of S&T" was begun with the first notice of the rapid decrease in applications of Korean SAT for S&T majors in the middle of 2001. The decrease was interpreted as a warning sign of the avoidance of S&T among teenagers and developed into the avalanche of discussions on the causes of such rapid decrease around the end of the year.

Through 2002, the “avoidance of S&T” was developed into a general policy agenda covering most of problems in S&T, not a teenagers' issue any more. Many scientists and engineers claimed that their own difficulties and problems be the main causes of it. In the name of measures to overcome the avoidance, they requested the government to solve their problems and to accept their demands. With the analysis of those claims, we can understand how a policy agenda is shaped and what the Korean S&T community is like.

Keywords: Korean scientific community, “avoidance of S&T”

1. Introduction

“Building the society centered upon S&T(科学技术中心社会机构)”, one of the main policy agendas of the Roh administration, is to cope with the big social issue of “avoidance of S&T(理工系忌避)”. When the issue was introduced in the middle of 2001, it was concerned with the rapid decrease in the applicants of Korean SAT for S&T majors(自然系列). In other words, at first, it was mainly related with the system of the entrance examination to universities. Through the next year, there were a lot of fierce discussions and arguments on the issue among journalists, politicians and policy-makers as well as scientists and engineers.

Interestingly, as discussions went on, what “avoidance of S&T” designated was extended into a complex of all S&T policy issues. Around the end of 2002, “avoidance of S&T” was not a phrase for just one event but a kind of umbrella term to cover all the problems of the S&T community. Under the flag of “avoidance of S&T”, many groups of scientists and engineers brought their own problems and difficulties into the issue, and requested some measures to face them. For example, to university professors, the preference of medical schools to engineering colleges and the preference of studying abroad to domestic graduate schools were serious phenomenal signs of avoidance of S&T; to graduate students and young researchers preparing for careers, poor financial and material support for their R&D were main causes for students to choose non-S&T majors and medical science. With these claims, what the “avoidance of S&T” meant was constructed to include each group's interest. At the same time, the argument that the whole society should consider the "avoidance of S&T" as serious was widespread. ,Ks the issue grew in this way, many problems neglected for long time were paid attention to and many measures proposed before but unapproved yet were realized.

This paper analyzes the process of social construction of "avoidance of S&T" throughout 2002, and discusses the role of this issue on S&T policy in general. In addition, it argues that the Korean S&T community is not homogeneous and consists of many subgroups with different interest, and shows what was the each group's interest.

2. “Discovery” of a Phenomenon of Avoiding S&T

2.1 Delayed Triggering Effect of the Discovery

In the summer of 2001, two professors of Engineering College, Seoul National University noticed that the proportion of S&T majors in SAT applications has been decreased rapidly from 43% of total applications in 1994 to 27% in 2001(see Table 1 .). Both of them claimed, in newspaper articles, that such fast decline should be regarded as a significant sign of avoiding S&T for majors among high school students and would result in the future lack of S&T manpower. They pointed several causes of the phenomenon and suggested some policies to deal with it [1,2].

Table 1. The number of applicants for each category of SAT (unit: headcount)

Year	For Humanities and Social Sciences		For S&T		For Arts & Athletics		Total
1994	372,311	48%	336,390	43%	73,048	9%	781,749
1995	416,958	49%	351,719	42%	74,984	9%	840,661
1996	393,295	48%	356,560	43%	74,519	9%	824,374
1997	428,064	48%	375,023	42%	82,234	9%	885,321
1998	426,423	49%	346,763	40%	95,484	11%	868,790
1999	466,651	52%	310,015	35%	119,366	13%	896,122
2000	481,027	55%	256,608	29%	134,662	15%	872,297
2001	416,700	56%	198,963	27%	123,466	17%	739,129
2002	365,892	54%	204,790	30%	105,240	16%	675,922
2003	361,002	54%	211,253	31%	101,899	15%	674,154

Source: Korea Institute of Curriculum & Evaluation

According to them, there were three main causes to stimulate students to choose non-S&T majors: the low participation of scientists and engineers in the policy decision making, lowered job security in manufacturing and R&D, and the lack of practical interest in college engineering education. First, it was emphasized that only 9% of cabinet members and bureaucrats at positions higher than the category 3 had the educational background of S&T in 2001; contrastingly, about 80% of new board members of private companies had S&T careers. To make the situation amended, the higher civil service examination system needed to be reformed in the long term, and it is necessary to make special appointments of scientists and engineers at high positions in the short term. Second, for industry to get more highly educated S&T manpower, it would be effective to activate the industrial-academic cooperation and to increase the exemption of military service. Third, S&T education at colleges should be changed to include some business skills, because scientists and engineers were requested to do more managerial jobs than before.

They were not likely successful to get people interested in that issue. The first article was published in *Chosun Daily Newspaper*, the most influential daily newspaper in Korea. However, only few article followed it. When we think that there were a kind of explosion of public interest in this issue at the end of the year and most of them repeated the same points of the first articles, it is surprising that the first two articles were almost neglected.

Why was the first response so weak, if it turned out to be such an important issue only in several months? It was because the causes and solutions were not persuasive enough to explain the phenomenon, i.e. the rapid decline of SAT applications for S&T majors; they were indirect and they were not new at all. First of all, the proportion of personnel at high positions with the scientific background had been always at that low level even when more than 40% of SAT applicants chose the examination of the category for S&T majors.

The reform of engineering education was also an old problem. Leading engineering professors tried to introduce the accredition system in Korea for high quality engineering education as early as in 1997when there was no hint of avoiding S&T on the basis of the SAT application. It is not quite sure that the improper engineering education at colleges caused the avoiding phenomenon of S&T. Rather, the truth is that the phenomenon was utilized to strengthen the necessity of the accredition system of engineering education[3].

Only the lowered job security could have influence on highs school students when they decided which type of SAT to take. Since the financial crisis in 1997, the job security became the most important consideration in the changed labour market with the high flexibility. Generally speaking, jobs with high security like school teachers or officials were non-S&T careers. In addition, many new jobs were emerging in the service industry which is regarded as less related with S&T than humanities and social sciences. Therefore, there was a correlation between those changes in the job market and the appreciable decrease of SAT application for S&T majors. However, it is still difficult to accept the industrial-academic cooperation and the exemption of military service as effective solutions to such changes of the job market[4].

2.2 Avalanche of Discussions on the Phenomenon

Despite of the apparent decline of SAT applicants for S&T majors, if the first two articles failed to draw a public attention, how could an avalanche of discussions on the issue occur from the early 2002? Internet and journalism, especially newspapers, played leading roles to get this issue widespread and well-known to the public by lots of in-depth articles. Then we can ask what reminded the journalists of the first two articles published several months ago? The most important thing was the medical schools' complete victory over several distinguished universities in attracting high school students. Most of students with high SAT scores definitely seemed to prefer medical schools to any other specialties or to any other colleges. Students who got admissions

from medical schools and any other colleges at the same time usually chose to enroll in medical schools, while some students with admissions from the engineering college of Seoul National University(SNU), the most prestigious one in Korea, were unsatisfied and gave up to enroll. As the result, the enrollment rate in the engineering college of SNU fell down from 90.6% in 2001 to 81.7% in 2002. It was embarrassing enough for the general public as well as professionals in S&T and education. Therefore, leading professors in S&T petitioned the government for special measures to face with this situation in Feb. 2002[5,6].

Journalist never failed to miss things with this very high news value. A great many articles analyzed the possible causes of the decrease in SAT application for S&T majors in all aspects. For example, dislike of science among teenagers, poor laboratory facilities at elementary and secondary schools, the income gap between medical doctors and researchers with Ph.D. degrees in S&T. Lot of writings were under somewhat exaggerated titles like "crisis of S&T" or "withering of S&T" or "saving S&T", which stimulated graduate students and young researchers at early stage of their careers as well as established scientists and engineers to be engaged in the discourse.

As the participants of the discourse got diverse and their own difficulties and problems were put into the discussions. the avoiding S&T did not just imply the decrease of SAT application for S&T majors. It became a package term to call lots of phenomena showing various troubles in S&T. Consequently, the avoidance of S&T was interpreted as the crisis of S&T to overcome for future development. The most distinguished example of this rationale was the in-depth serial reports on all the problems of S&T in Korea by the *Korea Economic Daily*, titled as "STRONG Korea." They said STRONG meant "Science Technology Research Our National Goal" as well as strong in general sense. That series dealt with the situations of several leading engineering colleges and the government-supported research institutes(GRIs), then reported the social and economic treatment of scientists and engineers. Finally, it conclusively suggested special measures to revive S&T by a national policy. From the fact that the series was honored to win several prizes in communication at the end of 2002, it is easy to understand how much it appealed to the public as well as the scientific community[7].

Scientific and technological organizations also played a role to the extension of the issue of the avoidance of S&T. They held forums to present that issue from their own viewpoints. For example, "Reinvigoration measures of science education in the time of the avoidance of S&T" held by the Science Education Research Institute of SNU, "Workshop of industry-academy-public research institutes to overcome the avoidance of S&T" organized by the Korea Federation of Science and Technology Societies, and "What are the nature and measures of the avoidance of S&T?" arranged by People's Solidarity for Participatory Democracy.

Internet provided many unorganized students and researchers in S&T with a very powerful means to take part in the discourse for individuals. The established scientists and engineers like professors or leading researchers of GRIs could get access to the mass media easily; they put emphasis on the social status of scientists and engineers or the lack of good graduate students due to increasing number of students studying abroad. Unlike them, graduate students and bench scientists and engineers were keen on economic reward, employment, job security, and etc. They coined a new term, “sciengineer” instead of the old terms like scientists and engineers, and formed an online-based organization called Scieng.net. The discourse of the avoidance of S&T gave chances for young scientists and engineers to make their own voice and to participate in the decision-making process. Two years later, one of the steering committee members of Scieng.net was appointed to a member of the Presidential Advisory Committee on S&T to represent many graduate students and bench “sciengineers”[8].

In accordance with the growing extension of the avoidance of S&T, the response of the government changed from a specific measure to comprehensive policies. When the decrease of SAT applicants for S&T majors was widespread among the public, unlike the first two arguments, it was understood mainly as an issue of science education at the secondary schools and the university entrance examination system. That is why the first committee to examine that issue in January 2002 was titled with "Committee for the Development of Science Education". The final report of the committee would include measures for better education in S&T; for example, there would be the establishment of “Best Science Teacher Prize” and “Presidential science fellowship”, strengthening of "Liaison between KAIST(Korea Advanced Institute of S&T) and science high school", and the abolishment of the cross application between SAT category and major category. The formation of “GRIs-allied graduate school” and “Pension for scientists and engineers” were included to improve the morale of scientists and engineers. However, when the final committee report was approved in July 2002 and many working scientists and engineers already took part into the discourse, it appeared to include additional measures to satisfy the requests from them which were related with the welfare of scientists and engineers and the improvement of R&D environment[9].

It is necessary to note that lots of measures, except for those closely related with the secondary education of science, were the answers of old problems, not the new issue of the avoidance of S&T. Before 2001, they were already suggested and discussed, but not accepted by the government for various reasons. A few of them like the opening of Korea Science Academy, a specialized high school for he gifted students in science, had been on their

way even before the issue was raised,. As a consequence, the discourse of the avoidance of S&T opened a "policy window" for measures to solve existing problems, rather new ones, which needed to be socially justified[10,11].

2.3 Decrease in SAT Application S&T Majors vs. Avoiding S&T

There were two interesting points to note when we consider the avoidance of S&T: one is that the decrease of SAT application for S&T majors resulted from the individual strategy to get admissions successfully as well as the general tendency to prefer non-S&T majors, and the other is that there are terminological tricks working when the categories of SAT and majors in universities are related directly. In general, even in 2002, the applicants of SAT for S&T majors were still more than 1.5 times of the admission quota of S&T majors at universities. That means that despite of the decline of applicants, final number of students with BA degrees would not change in terms of quantity(see Table 1. & 2.). This is one of the reasons why the warning about the future lack of S&T manpower was not so persuasive at first. In addition, considering the change of the total admission quota for each category of majors, it could be easier to get an admission from universities in case of taking SAT for humanity or art & athletics majors, not S&T. Therefore, when the two leading engineering professors argued the necessity of some measures to stop or reverse the trend of the avoiding S&T, their numerical data could not fully support their claims[12].

Table 2. The admission quota for universities(4yrs) (unit: headcount)

year	total	Hum	social	Natural	Med	Art& Athletics	Edu.	Hum.& Soc	Natural
1998	305,595	46,897	76,728	130,533	10,225	28,295	12,917	123,625	130,533
1999	311,240	47,772	80,437	129,204	10,210	30,383	13,234	128,209	129,204
2000	314,410	45,647	83,097	130,007	10,568	31,867	13,514	128,744	130,077
2001	316,730	45,632	84,444	130,089	10,722	32,610	13,283	130,076	130,089
2002	324,309	45,228	86,407	132,513	11,122	34,743	14,236	131,695	132,513
2003	327,076	44,973	88,541	132,018	10,899	36,589	14,146	133,424	132,018

Source: *Annual Statistics of Education*

Then, why did they do that? It is true that they had recognized the necessity to improve S&T education at colleges and social status of scientists and engineers. Actually, one of them was involved in the preparatory stage of the accredition system of engineering education. Therefore, it is more likely that they utilized the decreasing phenomenon of SAT application for S&T majors to make their suggestions persuasive and acceptable by the formation of a crisis. Of course, this is not to deny S&T are not favored as much as before.

In fact, even before the financial crisis in 1997, scientists and engineers had a correct understanding that S&T got less competitive and more troublesome among youngsters; professors lost their best students when they went abroad to study or chose to be medical doctors and officials instead of pursuing the career as researchers; researchers working at GRIs had complaints on the poor welfare system even with the earlier age limit than college professors; S&T personnel working for private companies were worrying about the lowered job security and the relatively narrow choices in the job market. The rapid social changes caused by the restructuring of the whole society made those problems explicit and serious, that is to say, there already existed lots of critical minds and troubles among scientists and engineers waiting for proper chances to express themselves.

By the translation of the decrease of SAT applicants for S&T majors into the avoidance of S&T, the medical science was excluded from the discussions on this issue, and the interest group was quite clearly specified with it. SAT has three categories according to future majors at colleges, for humanity and social studies majors including law and education, for S&T majors including medical science, agriculture, and home economics as well as natural sciences and engineering, and for arts and athletics fields. Among applicants for the SAT category for S&T majors, some of them get into medical schools and others choose natural science colleges or engineering colleges or agricultural science colleges. When people were talking about the avoidance of S&T, however, it is evident that they used the word S&T only for natural sciences and engineering. Only from a qualitative point of view, S&T were seriously threatened by the avoidance due to the strong preference of medical schools among those who took the SAT for S&T majors.

So the strategy of scientists and engineers was like this. NO matter how it was intended or not, the avoiding S&T was valid only for natural science and engineering, never for medical sciences. And then all the problems that scientists and engineers were already suffering from became the causes of the avoidance. Therefore, solving those problems would be the effective solutions of the avoidance of S&T.

3. Constructing the Phenomena in the Name of the Avoidance of S&T

Through the year 2002, the discourse on the “avoidance of S&T” was like an explosion. Almost all the organizations participated in the process by writing articles in various periodicals, both popular and academic, providing people with the both on- and off- line space to discuss one another, doing in-depth analyses to figure out the whole picture, producing reports to petition the government and important committees. Those who had direct channels to the decision-makers, those who gained great concerns from the public, and those who could specify their requests in practical ways, were successful to obtain what they wanted. As the result of those activities, the avoidance of S&T was constructed to be related with huge amount of phenomena and their possible solutions. Since scientific organizations and groups have different interests, some measures from different groups happened to be in conflict with each other.

3.1 Poor Science Education at the Elementary and the Secondary Schools

Science education at schools of every level has been notorious for its pedagogy dominated by memorizing theories and laws and applying for problem solving for the test, not by understanding the principles. The lack of facilities for experimental classes, the heavy burden of entrance examinations, and the shortage of training course for school teachers were pointed as main problems. As the result, students, except for a few of them, tend to lose their interest in science as they grow. Many specialists in the science education did know the fact very well and know what to do very well. However, they did not know how to get proper support for the development of manuals, training programs, textbooks, and facilities for it[13].

At the early stage, as mentioned already, the issue of avoiding S&T was approached from the aspect of science education reform at middle and high schools since the rapid decrease of SAT applicants for S&T majors was considered as the result of poor science education. The title of the first committee to deal with this issue was "Committee for the Development of Science Education." Therefore, the committee put emphasis on the informal science education to make up for formal science education at schools. For this purpose, programs like science camps, science museum activities, and the "Best Science Teacher Prize" were suggested by the committee. The underlying assumption was that the more students are interested in science, the more will choose S&T for their university majors. Admitting the poor situation of science education in classrooms has a long history, those measures would certainly not be effective for more students to apply for the SAT for S&T majors. Only a few science teachers and science education specialists were involved in the activities to input their opinions to the final report of the committee because science teachers were not organized and not much interested in this issue. As the result, when the issue was extended, the portion of science education at schools naturally got smaller.

3.2 Strong Preference of Medical Schools

The strong preference of medical schools among the applicants of SAT for S&T majors was the more evident indicator of avoiding S&T rather than the decrease of application was. Surprisingly, newspapers reported about some graduate students or even Ph.D. holders in S&T quitted their researches to get admissions of medical schools. It was a kind of internal competition in order to get good students between medical science and other S&T fields, never a competition between S&T and non-S&T. And S&T seemed to be beaten in this internal competition.

There were two advantages of being a medical doctor: higher job security and higher income. Unlike the scientists and engineers who are employed workers, medical doctors running private clinics do not have to worry about early retirement; in principle, they can work as long as they want. The average income of medical doctors is known to be highest level among professions. In some sense, those advantages themselves are not new at all. However, the economic situation due to the financial crisis made those advantages much more influential to choose majors or career paths. In fact, according to the National Health Insurance Corporation, their real income has been increased after the introduction of the separation of dispensary from medical practice in 2000; during the same period, the average income of S&T occupations fell[14].

Most high school students also considered job security and job availability as the most important criteria when they selected majors. According to a survey, the most favored job was a teacher among high school students polled. However, among the small group sample with high achievements at high schools, a medical doctor was the best job. Even among science high school students who are believed to have special talent and interest in S&T, a scientist or an engineer is evaluated as a good job in the aspects of the favor in work and the social contributions, but not as attractive as a medical doctor in the aspects of income, job security, and social recognition[14].

In this social environment, for S&T to compete with medical science, it is demanded to raise the job security and income up to the similar level of those of medical doctors. The idea behind a program to help students have prospect in S&T majors is to find and show many model figures making big money and successful career paths with S&T background or S&T majors.

3.3 Reform of GRIs and the Project-Based System

About factors resulted in the avoidance of S&T, researchers at GRIs mentioned their lowered social status, low income, and the increased amount of jobs after the introduction of the “Project-Based System(PBS)”. They argued that their colleagues had to leave works helplessly during the restructuring period. Even researchers who kept their jobs had to accept the abolishment of the retirement allowances and earlier retirement at 61. Reflecting these complaints, a survey revealed researchers at GRIs were most unsatisfied with their jobs and working conditions; university professors were most satisfied with relatively late retirement age, pension, and social recognition, and researchers at private companies were in the middle with satisfactory high income and unsatisfactory strong intensity of work[11].

Researchers at GRIs made their complaints to the government and tried to get them correct for long time. In July 2001 when the issue of avoiding S&T did not appear yet, a report titled with “Comprehensive Measures for the Enhancement of Researchers at GRIs and the Improvement of their morale” was approved at the National Committee of S&T. It included sub-programs for consistent research grants, increasing incentives, better welfare, reform of PBS, and more sabbatical leaves in detail. Another measures like a new GRIs-allied graduate school and the establishment of a benevolent society of researchers at GRIs, were also suggested together. But they were not accepted at that time because of the difficulties from getting a big grant at one time.

In July 2002, unlike in 2001, the rejected measures before were approved under the social pressure formed by the hot discussions on the avoiding S&T. Though the newly included measures still required lots of negotiation business among ministries, the decision-makers were persuaded by the claim that they were essential to make up for the Worse working conditions at GRIs. If the measures had not been redressed in the name of solutions for the avoiding S&T, they would not have approved[4].

3.4 Professors and Students at Universities

Concerning with the problems at academies, professors urged that the so called “getting graduate schools empty” was the most urgent phenomenon tackled in order to overcome the avoidance of S&T. They said the excellent BA students preferred studying abroad to studying at domestic graduate schools, which resulted in getting the graduate schools empty and gave rise the lack of researchers to work together. Therefore, to them, the measure like a new "fellowship for students to get MA and Ph.D. degrees abroad" was a non-sense to make things worse, though it was initiated to attract more smart high school students into S&T. That was why "the committee of deans of natural science colleges" and "the committee of deans of engineering colleges" requested, in one voice, the government to re-examine the measure.

However, professors appeared to have different prescriptions for that symptom according to the status and privileges of their universities. To professors of major universities, the poor financial support given to universities was the primary reason for that phenomenon; at universities, more than 70% of total Ph.D. degree holders were doing researches only with 11% of the total domestic R&D fund. Therefore, they claimed that the government should increase the R&D fund to universities. In contrast, to professors at small universities or local universities, the transfer of graduate students to major universities with a lot of advantages was the main cause of getting graduate schools empty. So they requested more R&D fund for small universities to keep their students and to do researches.

How about graduate students? Though they agreed that the poor financial support system was is one of the causes for students to study abroad, they had much more causes. First of all, they argued that the preference of researchers with degrees obtained at foreign universities be the main reason of getting domestic graduate schools empty; to get decent jobs, they thought, studying abroad was the best way. They also claimed that the hierarchical relationship between professors and students and big amount of non-research jobs led students to foreign universities. For solutions, they asked some advantage system for those who studied and got Ph.D. degrees at domestic graduate schools in addition to the increase of R&D fund for universities. According to them, this kind of measure would help people to put much value on S&T related jobs and domestic graduate schools at once.

Professors and students did not always have different opinions. It was only when the interest of each group was different or contradictory to each other. If not the case, they had the same view. All of them welcomed measures like special employment of more scientists and engineers for officials at high positions, higher income, more R&D fund to universities, more opportunities for jobs, and shortening of the working period for substitute military service or increasing the exemption of it.

3.5 Lowered Status of Professional Engineers due to the “Recognized Professional Engineer”

A professional engineer is a highly qualified and licensed engineer doing very specialized and professional jobs in engineering like making plans, design, supervision, and evaluation. To be a professional engineer, one has to pass the state examination and to get the license just as to be a lawyer. For long time, the professional engineers' society was kept in small size, and therefore they enjoyed many advantages coming from the rarity and monopoly. Except for the government officials who passed the state examination in S&T, professional officials were the highest status for a working engineer.

However, professional engineers began to lose their monopolistic status when the government introduced a new category of professional engineers, "the recognized professional engineer". According to the new system, anybody can be a recognized professional engineer without passing the examination, if he or she is educated at certain level and has experience for certain period of time. For example, to be a "special engineer", one should have working experience for 12years after graduation from a university(4yrs.). Once somebody becomes a recognized professional engineer, he or she can do the same jobs as a professional engineer does. The purpose of the recognized professional engineer system was to satisfy the increasing demand of professional engineers from industry and to acknowledge the value of working experiences. As the result, professional engineers as a whole increased from about 25,000 to about 100,000.

When the issue of the avoiding S&T was widespread, professional engineers who took the examination argued that the lowered status of them was the main cause of students' avoiding engineering. According to them, recognized professional engineers were not qualified enough to do the job and their lack of qualification caused many fraudulent works which resulted in the loss of professional engineers' trust and status. If professional engineers did not seem to be great and well-paid, who would want to be an engineer?

Even though their claims were not supported by concrete evidence, the important thing is that they tried to identify their problems as a phenomenon causing the avoidance of S&T in general and to solve them through the intervention of the government. For that purpose, they participated in the forum on the issue of avoidance of S&T and put their collective voice into more general context of the discourse.

3.6 Low Participation of Scientists and Engineers in Policy Decision Making

The social status of scientists and engineers maybe the most popular issue throughout the year 2002. The main idea was that scientists and engineers have not enjoyed the right status for their contribution to the national development. Rather, their social status is unfairly lower than other professions like medical doctors and lawyers. It was often mentioned that the low proportion of high fficials with educational background in S&T was one of the major causes. This phenomenon was said to explain why smart students usually chose to be medical doctors or to take the state examination in non-S&T fields like law or administration.

As a solution, it was suggested that a new measure to guarantee the employment of scientists and engineers at higher position than a certain level be urgent. They said, in order to raise the participation of scientists and engineers in policy decision making processes, and at the same time, in order to help the status of scientists and engineers rising, that would be best way to go. It was already proposed at the first argument on the avoidance of S&T. Everybody in the scientific community welcomed this idea and put much emphasis on this suggestion. Unlike other measures discussed in this paper, this did not seem to do any harm to any participating group or individual. So, it is not surprising at all to see the law including this idea be approved without any resistance.

4. Concluding Remarks

As the result of long and hot discussions on the issue throughout 2002, "the avoiding phenomena of S&T" became a comprehensive S&T policy agenda including all the known problems of S&T. For various groups in S&T identified their problem, both new and old, as the phenomena causing the voidance of S&T and put them under the umbrella of "avoidance of S&T" asking the government to solve. Finally, at the end of 2002, it was the first target to overcome or to correct it for further development of S&T in Korea. All the candidates for the presidential election made this one of their major election pledges. In 2003, the Rho's administration set an S&T policy agenda, "Building a society centered upon S&T" for breaking through the avoidance of S&T.

Through the analysis of the process, I conclude two points. One is that we can see how a policy issue was initiated and extended into a policy agenda by a lot of actors. The issue of "the avoiding S&T" opened a policy window through which old issues could be seen in new ways, and resulted in new measures to solve them. The other is that the Korean scientific community consists of many subgroups with different interest of their own, who are sometimes in conflict with one another and sometimes make the cooperation. One interesting point is that not all, but many subgroups make self-identification according to the institutions where they are working, rather than their academic concerns. Maybe that can be explained by the low mobility of scientists and engineers among academies, public research institutes, and private companies.

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