

50 years of history, the present and the future

by

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Abstract: In this short note, we outline the history of the Journal, present its recent developments, as well as changes that we are going through, with some attempt at sketching the plans for the future. Some illustrations are provided, concerning the publication statistics, especially with respect to the last 15 years.

Keywords: *Control & Cybernetics*, history, content, open access, international dimension

1. How it went

The very first issue of *Control and Cybernetics* appeared in the middle of the year 1972 as a double issue, 1/2, of that first annual volume. It is not by any incidence that the journal was given this name – cybernetics* was very much still in fashion (having also gone through the ideological doubts from the Soviet side), and the institute, which was one of the predecessors of the present-day publisher of the Journal, that is – of the Systems Research Institute of the Polish Academy of Sciences, and within which the Journal was established, bore the name of Institute of Applied Cybernetics (of course, of the Polish Academy of Sciences). The previous name of the very same institute was Institute of Automatic Control, hence the entire name of the Journal.†

Actually, it is the first part of the name that was most appropriate at that time – control and optimization, as well as applications of control (regulation,

*At that time, notably in Poland, but definitely not only, “cybernetics” was understood in a much broader way than meant by the “father” of cybernetics, Norbert Wiener, this understanding encompassing, actually, both the present-day computer science, and also the domains, pertaining to control and systems science.

†The entire content of the Journal can be easily found on our website, [Control and Cybernetics Journal - Mainpage \(ibspan.waw.pl\)](http://ControlandCyberneticsJournal-Mainpage(ibspan.waw.pl)) and so all our Readers can, in fact, track by themselves the history of orientation of the Journal.

automation, and, ultimately, robotics)) and of control theory were definitely the leading themes of the new journal. Yet, from the very beginning the scope started to broaden, encompassing also operations research, applied statistics, and so on. There was also an important presence and significance of applications, which referred to quite a variety of methodologies, basically drawing upon applied mathematics and its diverse branches, as well as techniques. The beginning of the 1970s marked also the rapid onset of systems analysis, as a very broad and somewhat amorphous domain, referring to, but, in fact, quite loosely associated with systems theory as it had been developing before.

It was assumed from the start that the Journal shall be an important forum, presenting the achievements of the employees of the Institute, and that on the international scale, so that the papers were to be published in the so-called “conference languages”, first of all English. Thus, in the first issues of the Journal, papers in different languages appeared, but soon afterwards English became the sole language. Although the Journal was primarily meant to show the work of Polish scholars to the world, it welcomed from the beginning the papers from abroad, their share fluctuating over time, but generally increasing, to then become really dominant.

It should be emphasized that *Control and Cybernetics* was the very first Polish journal, focusing on control and automation, published in English and gaining international recognition, even though it was by no means the first Polish journal dealing primarily with similar themes. By the time *Control and Cybernetics* was established, the most important journal in Poland in this domain was *Archiwum Automatyki i Telemechaniki*, appearing since 1956 and publishing mainly in Polish language, initially closely associated with the very same Institute of Automatic Control of the Polish Academy of Sciences, but thereafter moved to another location, and then associated with the Academy’s headquarters. Since 1990 it is being published in English language as *Archives of Control Sciences*.

When looking at the archival material, one notices at once that the beginnings were not easy at all. The first issues are all “double” issues, so that the quarterly turned, effectively, for a period, into a semi-annual journal. Again, with time, this changed and nowadays all the annual volumes are composed of four independent issues. It even happened once that we published more than four issues in a year.

The persons most closely linked with the history of the Journal were, of course, its founders, and then the consecutive editors. Thus, one should mention here Professors Andrzej Straszak and Kazimierz Malanowski, who were the Editors-in-Chief, Dr Krzysztof Iracki, who served as the Secretary of the Editorial Office, and Ms Joanna Runowska, the Editorial Assistant. Currently, the Journal is being run by the team, composed of Professor Zbigniew Nahorski, Editor-in-Chief, D.Sc. Jan W. Owsiniński, Professor Jan Sokołowski, D.Sc. Jörg Verstraete and Ms Joanna Niesłuchowska-Kubacz.

Andrzej Straszak was the initiator of the Journal and the director of the Institute at that time. It was very much of his idea that science and its results ought to be shared internationally, something that was not so obvious for many half a century ago. He was always watching for what are the current trends and innovations in science and was ready to follow these. This also made him an effective promoter of scientific careers of several young scientists from the Institute.

Andrzej Straszak was followed by Kazimierz Malanowski, a prominent and internationally recognized scientist, working in the leading field of the Journal – modelling of dynamic processes, control theory and optimization, with a strong mathematical underpinning. He contributed in a very important manner to the level and quality of the Journal, especially through his broad connections within the international community. This brought many valuable papers from authors working in Germany, France, Soviet Union and Russia, Israel, as well as United States and United Kingdom, and also a number of high quality special issues, devoted to selected problem domains or methodological approaches.

In the beginning of the 1990s, in a heavy period of economic transformation in Poland, but also of systemic transition in the entire post-socialist world, a core of the present team took over edition and publication of the Journal. The new team was confronted, therefore, with a much more globalized scientific community, but also with the new challenges of the commercializing environment of science and education sector.

One of the changes that took place more or less at that time consisted in the perceptible broadening of the subject scope of the Journal. Thus, side by side with the historical mainstream of mathematical modelling (especially of dynamic processes), control theory and optimization, including multiobjective optimization and decision making, an increasing share was taken by papers from operations research, on the one hand, and from data analysis and computer science on the other hand. The latter had to, unavoidably, encompass methods and techniques related to artificial intelligence. A parallel development consisted in the inclusion of the soft approaches, based on fuzzy set theory, rough set theory, and their extensions, particularly proper in view of the strong representation of these at the Institute.

Altogether, throughout the history of the Journal, several dozens of special issues were published, some of them enjoying high popularity until now, since in many instances they proposed the cutting edge results in the concrete domains, including those of high practical importance. Actually, some of the papers enjoying the highest citation numbers were published in the special issues.

The Editorial Board of the Journal has been changing, of course, over the years. Initially a rather small body, it has grown to roughly 40 persons, its current composition dating from some 4 years ago. Close to three quarters of members of the Board are not located in Poland, which shows, again, the degree of internationalization of the Journal. We are very grateful to our friends across

the globe, who not only agreed to serve on the Board, but very often directly help us in the conduct of the editorial processes, intervening in the numerous day-to-day matters.

The present team, managing the Journal, tries to maintain the best traditions of the five decades, and also to effectively cope with the challenges of the changing landscape of scientific publishing. It is well known that the change, which took part especially some 15 years ago, and, in fact, is still going on, has completely transformed this landscape, mainly in the highly commercial direction. Definitely, it is only apparently a paradox that the movement towards open access was accompanied by increased commercialization of the scientific publishing market, with tremendous increase of the overall value of this market, so that it finally became of high interest for the large financial players of the world, as well. It is only and apparent paradox, because as science became an important sector in all of the developed world, the mechanisms arose, very much beyond the traditional peer evaluation, accelerating the quantitative development of this market, and hence also of its commercialization.

We are now also moving into open access. It has been for more than 20 years now that our papers have been freely available on the web, but after a certain period (a year, in principle) since they were published. Currently, we are providing fully free access also to our freshly published papers. At this point one should note that never in the history of the Journal publishing with *Control & Cybernetics* entailed any costs to authors. It has also always been the policy of the Journal to not to put an excessive burden of editing work on the shoulders of the Authors, including language editing. Although we wish to keep this line in general, there will have to be changes with this respect, also in view of the envisaged consequences, associated with moving to open access.

2. Some more recent statistics and problems

Just for the sake of illustration we shall now provide some figures, presenting the publishing activity over the last years, starting with the year 2005 (see Table 1). This means that we start from a truly good period in both the sense of quality and quantity. This can be seen from the sheer volume of the published papers, but is also corroborated by the citation figures. Further on, we shall yet return to this very important issue and show some relevant and interesting figures.

The two-part general Table 1 shows also the progressing internationalization of the Journal, even if marked with definite fluctuations. It should be noted that these figures do not account for introductions, prefaces, editorials and so on, just the scientific papers.

Then, in Table 2 we show the changes over time of the numbers of referees, involved in providing opinions on the submitted papers. As it is very well known, refereeing is the primary difficulty in the modern scientific publishing, in view of several simultaneously occurring phenomena: time pressure on the

most prominent and hence most competent scholars, proliferation of journals and papers (mentioned already in the comments on the explosion of the scientific publishing market), and also time pressure on the publishing process. There is, as well, the growth of the sheer volume of the contemporary knowledge and its various disciplines and subdisciplines, with their proper methodologies and techniques, which, coupled with the parallel expansion of multidisciplinary and hybrid approaches, creates an indeed formidable obstacle for the evaluation procedures.

We are, of course, also the “victims” of these processes, with referee search being one of the primary tasks, not always happily and successfully accomplished. There are not infrequent cases, in which we address more than 10 potential referees, the record-breaking ones reaching close to 20 persons. And this not always with final success. It is in such situations that the members of the Editorial Board often come with so much needed help.

Now, we share the statistics, reflecting the popularity of papers from the Journal, as provided by a global distributor, supplying the content of the Journal to the global audience. Thus, Table 3 shows, for the reporting years starting with 2009, the numbers of “hits”[‡] on individual papers from the Journal, their totals for the given years and in division into the papers from the consecutive volumes. It ought to be well kept in mind that these are the numbers for just one global distributor and they ought to be interpreted accordingly.

These figures show, first, a sort of assessment of popularity, which the particular volumes enjoy. This popularity is usually not based on single papers, but on a bigger number of them, and, as already mentioned, it is often due to the publishing of truly interesting special issues.

So, first, it is clear that there are two volumes in the period considered that enjoyed a much higher popularity, in total, than the other ones. These two are the volume 38 (year 2009) and volume 45 (2016). It is particularly the latter volume that stands out, since the respective “hits” have been reported for a much smaller number of years. In view of this difference we provide also, in the last row, the mean number of hits, regarding the consecutive volumes. In these terms, volume 45 comes out very distinctly, being, however, followed not by volume 38, but by volume 42 (2013). Of course, very little can be said of the last few years, due to their shorter exposition.[§]

Another highly interesting phenomenon is the very pronounced differentiation of the total number of hits for particular reporting years, this difference reaching one order of magnitude, and very often being very big for the neighbouring years. This fact disturbs the possibility of observing the hypothetical regularity of the increase and then decay in the interest over time. Even if such

[‡] “hits” meaning here opening of the papers, with, however, no other consequences attached to such an action.

[§] The definite irregularity of the starting year of exposure of the consecutive volumes results from the fact that these volumes started to be supplied by the distributor at different times in the successive years.

Table 1. General statistics of the Journal starting with the year 2005

Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pages	1195	1025	1069	1064	1672	1237	1262	898	884	600	534	570	388	532	582	584	683
Submissions	92	96	123	116	147	135	144	132	91	94	87	74	54	92	86	116	128
Published papers	53	43	47	44	76	58	60	44	47	31	27	27	19	23	22	23	30
Authors	91	92	93	86	148	140	127	114	94	62	62	57	42	54	50	60	65
<i>Shares of authors, in %</i>																	
<i>Poles</i>	40	40	40	40	38	38	67	38	51	50	19	60	31	33	2	13	31
<i>Other CEE*</i>	10	10	10	10	10	10	5	7	2	8	2	2	5	7	4	10	8
<i>Other Europe</i>	32	32	32	32	33	33	19	13	17	13	16	9	19	0	58	8	18
<i>Americas</i>	13	13	13	13	14	14	5	5	12	2	13	5	2	6	10	0	20
<i>Asia</i>	5	5	5	5	5	5	4	30	17	26	43	25	29	54	22	60	15
<i>Rest of the world</i>	0	0	0	0	0	0	0	7	1	2	8		14	0	4	10	9

*Central and Eastern Europe

Table 2. Referees, involved in refereeing papers associated with particular annual volumes

Years	2007	2008	2009	2010	2011	2012	2013	2014
Total number	94	75	124	106	90	126	116	91
Poles	37	19	34	42	29	38	56	27
Foreigners	57	56	90	64	61	88	62	66
% share of foreigners	61	75	73	60	68	70	53	73

Years	2015	2016	2017	2018	2019	2020	2021
Total number	70	66	63	73	55	58	52
Poles	11	20	12	7	8	8	24
Foreigners	59	46	51	66	47	51	29
% share of foreigners	84	70	81	90	85	88	56

a hypothetical kind of shape can be observed for, say volume 41 (2012), when assessed against the irregularity of the total numbers of hits across years, it becomes insignificant and, actually, cannot even be subject to analysis.

This phenomenon indicates an important factor of the international market here in question, namely its dependence upon the behavior of significant players, acting on this market – their own activity, preferences, principles of action, and even changes in the way of proceeding over time. That is also why one should be very careful with all kinds of index values, citation indices and so on. Even if their knowledge is necessary for purposes of assessing the output of scientific institutions and teams, as well as individual scientists, it cannot, definitely, be treated as “absolute truth”. This is, in particular, well illustrated by the differences in the respective values (e.g. citations), depending upon the source used. The issue reaches deeper, involving a lot of definitional doubts and data analytic problems, which we shall not discuss here, for most of them are a subject of lively debate over the last few decades.

Suffice to indicate that while *Control & Cybernetics* is being now continuously indexed by some of the global services, and there is quite a number of the more specialized ones that also provide information on our publications, and, moreover, we shall try to become present on all those that are of importance nowadays, we certainly do not overestimate the “intrinsic value” of this kind of

Table 3. Internet “hits” on papers from *C&C*, made available by a global distributor

Years	Hits	Annual volumes of C&C						
		2008 vol. 37	2009 vol. 38	2010 vol.39	2011 vol.40	2012 vol.41	2013 vol.42	2014 vol. 43
2009*	4	1	3					
2010	625	57	491	77				
2011	104	6	39	59				
2012	205	17	43	54	91			
2013	318	15	38	40	57	78	90	
2014	316	9	28	42	23	83	95	36
2015	394	4	21	35	41	58	100	115
2016	1569	117	310	221	193	124	267	143
2017	871	12	56	44	38	45	81	58
2018	892	10	25	53	17	51	135	43
2019	668	10	19	30	17	49	85	70
2020	591	21	26	36	20	23	42	34
Totals	6557	279	1099	691	497	511	895	499
Means		23.3	91.6	62.8	55.2	63.9	111.9	71.9

* reporting started at the end of 2009

Annual volumes of C&C					
2015 vol. 44	2016 vol. 45	2017 vol. 46	2018 vol. 47	2019 vol. 48	2020 vol. 49
20					
184	10				
117	413	7			
85	378	95			
75	228	24	61		
45	83	14	32	37	178
526	1112	140	93	37	178
87.7	222.4	35.0	46.5	37.0	178.0

assessment. We are, in this context, indebted to all the Authors and Referees, who contribute to the Journal and its functioning irrespective of the ups and downs of the global index landscape.

At this point, we would like to thank all our friends, whether those collaborating closely with the Editorial Office, or those from the Editorial Board, but also many Referees and Authors, who have become a part of the society around the Journal, and with whom we work together, to a large extent – for whom we work, along with those hundreds and thousands readers around the world, who take advantage of the knowledge, disseminated through our Journal. We hope to continue and improve, and secure a good future for *Control & Cybernetics* and, at least in terms of what it provides, also to its Readers.