IDENTITY, SECURITY AND DEMOCRACY
NATO Science for Peace and Security Series

This Series presents the results of scientific meetings supported under the NATO Programme: Science for Peace and Security (SPS).

The NATO SPS Programme supports meetings in the following Key Priority areas: (1) Defence Against Terrorism; (2) Countering other Threats to Security and (3) NATO, Partner and Mediterranean Dialogue Country Priorities. The types of meeting supported are generally “Advanced Study Institutes” and “Advanced Research Workshops”. The NATO SPS Series collects together the results of these meetings. The meetings are co-organized by scientists from NATO countries and scientists from NATO’s “Partner” or “Mediterranean Dialogue” countries. The observations and recommendations made at the meetings, as well as the contents of the volumes in the Series, reflect those of participants and contributors only; they should not necessarily be regarded as reflecting NATO views or policy.

Advanced Study Institutes (ASI) are high-level tutorial courses to convey the latest developments in a subject to an advanced-level audience.

Advanced Research Workshops (ARW) are expert meetings where an intense but informal exchange of views at the frontiers of a subject aims at identifying directions for future action.

Following a transformation of the programme in 2006 the Series has been re-named and re-organised. Recent volumes on topics not related to security, which result from meetings supported under the programme earlier, may be found in the NATO Science Series.

The Series is published by IOS Press, Amsterdam, and Springer Science and Business Media, Dordrecht, in conjunction with the NATO Public Diplomacy Division.

Sub-Series

A. Chemistry and Biology
B. Physics and Biophysics
C. Environmental Security
D. Information and Communication Security
E. Human and Societal Dynamics

http://www.nato.int/science
http://www.springer.com
http://www.iospress.nl

Sub-Series E: Human and Societal Dynamics – Vol. 49

ISSN 1874-6276
Identity, Security and Democracy
The Wider Social and Ethical Implications of Automated Systems for Human Identification

Edited by
Emilio Mordini
Centre for Science, Society and Citizenship, Rome, Italy
and
Manfred Green
Centre for Disease Control, Israeli Ministry of Health, Tel Aviv, Israel

IOS Press
Amsterdam • Berlin • Oxford • Tokyo • Washington, DC
Published in cooperation with NATO Public Diplomacy Division
This book is dedicated to the memory of Ermelando Vinicio Cosmi who passed away before its publication.
Preface:
Life in a Jar

Emilio MORDINI
Centre for Science, Society and Citizenship, Rome, Italy

The visitor who goes to Yad Vashem in Jerusalem may happen to come upon a tree planted in honor of a Polish Catholic woman, Irena Sendlerowa (Sendler)1. Irena’s father was a medical doctor who had a reputation as the only doctor who would treat Jewish patients in the anti-Semitic pre-war Warsaw. Irena followed her father’s example and when she was at university she crossed out the “Aryan” stamp that allowed her to sit on the “normal” seats in lecture halls and chose to sit on the “Jewish” benches2. In 1939 the Germans invaded Poland, and established the Warsaw ghetto, into which some 500,000 Jews were crowded3. Irena, who was at that time a social worker of the Polish Contagious Disease Department, was allowed to enter the Ghetto. Her work consisted in distributing medicines and vaccinations among Jewish children, a “humanitarian” intervention allowed only in order to prevent epidemics that could also affect the German army. There was a church next to the ghetto, which had one entrance in the ghetto and another on the “Aryan side”. Irene discovered a way to pass on children unnoticed into the Aryan side of the Church. Then, if children could speak perfect Polish and knew some Christian prayers, they could be taken by Polish Catholic families or religious orders, which could care for them. This was very risky but Irena succeeded in “smuggling” in such a way some 2,500 children before being discovered and arrested by Germans on October 20, 1943. During her rescuing activity, Irena had a problem to solve, which was only apparently minor: hidden children should not go dispersed, they should return to their Jewish parents when the war was over. Irena insisted on recording the children’s details, their names were written down on fine tissue papers and then put into two jars that were buried. The Nazis caught Irena but did not find the two jars. Under torture (she had both her legs and feet fractured) she revealed nothing. Thanks to a bribe paid by Zegota (a Polish underground group to assist Jewish people, made up by Jews and non-Jews), Irena escaped execution and spent the rest of the war hidden under a false identity. When the war was finally over, she dug up the jars and began searching children and trying to find a living parent.

Fifty six years later, in 1999, in a rural school of Uniontown, Kansas (a small village of 288 inhabitants), a teacher showed four students a short clipping from a March 1994 issue of News and World Report, which said, ‘Irena Senderler saved 2,500 children from the Warsaw Ghetto in 1942–43’4. He told the students that he had not heard of this woman or story before, and challenged them to enter into the National History Day

---

2 For that she was suspended from the university for three years.
program with a project devoted to Irena Sendler. After a year of research the four students wrote a play (Life in a Jar) in which they portrayed the life of Irena. The piece had an extraordinary success and was performed in other Kansas schools, and soon also all over the US. Following the success of the play, the community of Uniontown decided to sponsor an Irena Sendler Day and to search for her grave in Europe. They discovered that Irena was still alive and living in Warsaw. Indeed those who had rescued Jews during the Nazi occupation were looked on with suspicious eyes in communist Poland. Immediately after the war Irena was repeatedly interrogated by the secret police and left to continue her work as a social worker, only provided that her story remained almost unknown homeland and world-wide. Despite that in 1965 she was recognized as Righteous Among the Nations by Yad Vashem, but Polish authorities did not allow her to travel to Israel. Eventually four years after the Life in a Jar project, in 2003, Irena received Poland’s highest honor, the order of the White Eagle and in 2007, Irena was also nominated for the Nobel Peace Prize. Irena passed away on May 12th, 2008 in Warsaw. She was 98 years old.

Many lessons can be learned from Irena’s story, and one is worth mentioning in a book that is dedicated to the thorny and multifaceted relations between identity, security and democracy. Irena’s life is an extraordinary illustration of how full of nuances the process of human identification is. “Life in a Jar” is more than a metaphor of the life of Jewish children rescued by Irena, it is a metaphor of the whole system for human identification, of its paradoxes and contradictions, lightness and darkness.

Personal Identification

Many people think of personal identification as only part of the security/surveillance apparatus. This is likely to be an oversimplification, which largely misrepresents the reality. The need for recognition schemes is actually inherent to human civilization itself, probably dating back to the first urban societies in the Middle East and China, when societies became as complex as to require frequent interactions between people who did not know each other. Persons that travelled outside of the confines of their home (e.g., military, sailors, traders) needed to be recognized and to recognize. The first method for doing this involved recording descriptions of physical appearances however this method alone became inadequate as human interactions became more and more frequent and complex. The first recognition schemes were then probably based on artificial body modifications (e.g., branding, tattooing, scarification, etc.) and tokens.

5 Irena was pregnant, and she lost her second child because of the hard interrogations.
6 Only in 1983 did Irena finally go to Israel.
7 That year the prize was eventually given to Al Gore.
8 “Quoted by The Times, May 12, 2008, Irena Sendler Obituary, http://www.timesonline.co.uk/tol/comment/obituaries/article3918822.ece.
9 This was probably at the origins also of the metaphor of the last travel – that in netherworld – where one needs to be recognised as well.
11 Early signs of recognition also had a religious meaning. In the Classic Greek religion, there was a close link between identification documents (i.e., written tablets, seals, etc.) and the hereafter. All gods of the netherworld (differently from Olympic gods) could write and read. Hades, the King of the Infernal Regions, was called by Aeschylus “he, who writes on the tablet” (Aesch. Eum.275). Hades and Thanatos (Death) “cata-
The Roman Empire was the first cosmopolitan society in the west and was also the first example of a universal system for people recognition, which was mainly based on badges and written documents. In Middle Age Europe — where the majority of the population never went outside the immediate area of their home or villages — individuals were identified through passes and safe-conducts issued by religious and civil authorities. The birth of large scale societies and the increased mobility associated with urbanization imposed new recognition schemes. The first passports were issued in France by Luis XIV in 1669, but only by the end of the 19th century was a true universal passport system established. In the period immediately after the first World War, with the disintegration of three large empires (Austro-Hungarian, Russian and Ottoman), and large masses of people forced to move across and within national borders, the international passport system was finally fixed. In the same period, also citizens’ movement within national borders were increasingly ruled by identity papers and many countries made national identity cards mandatory. In the 20th century nation-state system, passports and ID cards — incorporating face photography, and in some cases also fingerprinting — have become the primary tool for people recognition. This has increasingly made identity papers also a powerful instrument to classify individuals for various purposes, including taxation, mobility control, police supervision, law enforcement, war, and segregation. No doubt that many of these purposes are ethically problematic and politically questionable. The most famous case is certainly the case of ethnic and religious classifications on national identity cards. For centuries, passes, safe-conducts, letters of presentation, birth certificates and other identification papers had been filled with details about religion, ethnicity, race, and so on, but what happened in the last century is definitely appalling and went well beyond the Nazi “J” stamp.

The “J” stamp

The story of the infamous “J” stamp used in the Nazi regime in Germany, Poland, France, Hungary, and other countries is quite known, but few know that a similar “J” stamp was first used in 1910 in democratic Switzerland on East European Jewish refugee documents, as recently demonstrated by the Bergier Commission. Also in the Russian Empire there was an internal passport which included ethnicity as a main category. The passport was abolished in 1917 but it was reintroduced in 1932. At that time

---

12 J. Torpey, 2000, The invention of the Passport- Surveillance, Citizenship and the State, Cambridge UP.
13 As stated by the Final Report of the LSE Identity Project (http://is2.lse.ac.uk/IDcard/identityreport.pdf) “The relationship between Identity Cards and ethnic profiling is strong, yet poorly studied”.
the USSR was enforcing a new system of compulsory collectivization of agriculture. Almost 200,000 households were affected by the requisition of property, land, and houses. The whole agricultural system was ruined and a famine soon developed. In order to prevent an exodus of peasants from the hunger-stricken regions to other regions, the government introduced new identity papers and obligatory registration for citizens. The internal passport had an entry for “ethnic nationality”. People were prevented because of their ethnicity to move and, as a result, seven million people died in the so-called “Holodomor” (extermination by starvation). The USSR internal passport then played a critical role also in several other actions in which the communist regime targeted particular ethnic groups for restrictions, compulsory relocation and extermination.

The role played by Rwandan ID cards in another genocide, the Tutsi genocide, is also well known. An estimated 500,000 to 1 million people, primarily ethnic Tutsis, were exterminated by the majority Hutus in Rwanda in 1994. Scholars suggest that prior to the rigid quota system imposed by Belgian colonial authorities, the Hutu and Tutsi were social caste groups rather than ethnic groups. However when the genocide broke out in April 1994, thousands of roadblocks were erected all over the country to filter Tutsi, who were identified and selected for killing because the IDs mentioned their ethnic group.

Jumping to the present, ethnicity appears on China, Sri Lanka, and Singapore ID cards; the religion of the card bearer is noted in Saudi Arabia, Turkey, Egypt, Indonesia, Iran, Jordan, Laos, Malaysia, Pakistan; in Syria special stamps on the regular ID card identify Kurds and Jews. Finally there are many ways in which identity documents can inform about ethnicity, without mentioning explicitly ethnic or religious affiliation. For instance the Serbian Identification Law prescribes that the ID card should be in Serbian language and the “other languages of those ethnic groups who are granted constitutional right to use their own mother tongue.” In Israel ethnicity is no longer a category of the Teudat Zehut card, but Jewish citizens have their birth date registered as a Hebrew date, while non-Jews have not.

According to James Fussell, Executive Director of Genocide Watch, the role played by ID Cards in discrimination against ethnic and religious groups, is threefold, with different degrees of severity. The first degree is racial segregation. People are ethnically profiled and ID cards become a powerful instrument for group classification and social segregation. “The ability of the individual to determine when and how to identify self is constrained. Cards play a role in governmental, financial, employment seeking interactions.” The second degree is legal segregation and ghettoization. In this case classification on ID Cards “is central in the enforcement of institutional and legal domination. Cards determine where a person is permitted to live, to work and restricts freedom of

---

15 On November 28th 2006, the Verkhovna Rada (Parliament of Ukraine) had passed a Law defining the Holodomor as a deliberate Act of Genocide, a method to ethnically cleanse Ukrainians from the territories of Ukraine.

16 Both groups have restricted rights.


movement. Threat of confiscation of the ID card is an additional means of control.” Finally the third degree is deportation, expulsion, forced relocation, massacres, ethnic cleansing, and genocide. In this event, classification on ID Cards becomes “central in selection of the targeted population group. Issuing and enforcing use of the ID cards is one segment of a destruction process. Persons who select or control a group prior to death contribute as much to their destruction as the immediate killers”.

Irena’s story then reminds us of the terrible risks entailed by any group classification. The yellow Star of David – forced on Jewish clothing during the Shoah – and “J” stamp on ID documents are the obscene symbols of what people identification could produce when it becomes “a segment of a destruction process”. Yet identification does not necessarily entail classification.

“Personal identity” means two separate concepts, namely that an individual belongs to some categories and that she is distinguished by other persons and understood as one. In other words, there are two different aspects involved in personal recognition, 1) distinguishing between individuals, and 2) distinguishing between sets of people. The latter is likely to be the real issue. Dictatorships of any kind and totalitarian regimes have always ruled by categorizing people and by creating different classes of subjects. When rulers want their subject to humiliate herself or her fellows, they create categories of people or exploit existing categories. This is for many reasons; from a psychological point of view it is easier to induce cruelty against groups which are somehow abstract entities, rather than against single, identified, individuals; from social and political points of view this allows a process known as “pseudospeciation” to be produced.

Pseudospeciation is a process which turns social and cultural differences into biological diversities. It promotes cooperation within social groups, overpowering the selfish interests of individuals in favour of collective interests, yet it also inhibits cooperation between groups, and it fosters conflict and mistrust. Erik Erikson, the great child psychoanalyst known for his studies on child’s identity, was the first to use this term. He lamented that pseudospeciation produces atrocities and brutality. “What is at stake here – wrote Erikson – is nothing less than the realization of the fact and the obligation of man’s specieshood. Great religious leaders have attempted to break through the resistances against this awareness, but their churches have tended to join rather than shun man’s deep-seated conviction that some providence has made his tribe and race or class, caste, or religion “naturally” superior to others. This seems to be part of a psychosocial evolution by which he has developed into pseudo-species ... for man is not only apt to lose all sense of species, but also to turn on another subgroup with a ferocity generally alien to the ‘social’ animal world” 20. Raids, concentration camps, mass deportations and executions, which have caused the most horrible manslaughters, are all acts based on pseudospeciation, which requires that people are sorted out according to some shared attributes (e.g., skin colour, cultural or religious belonging, nationality, physical disabilities, social class, location, and so on).

---

19 This is probably one of the reasons why prisoners in extermination camps are so often anonymized, say, to make it psychologically easier for their torturers to persecute them.

Rights and Identity

We are all victims of the illusory belief that personal identification per se threatens basic liberties, and infringes our private sphere. People are concerned that large scale systems for personal identification can turn democratic states into police states. Of course one can be legitimately worried about giving too much power to governments, but this is a general issue that does not directly concern personal identification. To be sure, any process of personal identification implies that individuals are recognized subjects of rights and obligations, and this could be seen as a limitation of individual liberty. Yet there would be no rights, no liberty, without personal identities.

It was the French Revolution that first affirmed the indivisible unity of citizenship right and individual recognition. Universal rights and individual identity became two sides of the same coin. Absolutist regimes worked through social intermediaries, while the new revolutionary, democratic, order was based on a direct, unmediated, relationship to the citizen. The French citizen became an unmarked individual who was no longer a member of a group but just an inhabitant of the French nation. The citoyen was not a member of a community, a manor, a church, or a guild. It did not matter if he was a man or a woman, black or white, Jewish or Christian, Roman Catholic or Lutheran, he was just a citizen. The Declaration of Rights of Man and Citizen, approved by the National Assembly of France, on August 26, 1789, stated that “Men are born and remain free and equal in rights” and on August 4, 1794, five years after the Revolution, France also enacted the first law in the West that fixed together birth certificate, citizenship, and personal identity.

One can claim her rights, including the right to be left alone, and the right to refuse to be identified, only if she is an identifiable subject, if she has a public identity. Even if one is identified only for being unjustly arrested, this still means that there are some rules to be respected. Personal identification always implies a sort of respect for the law (of course a law can be horrible, but this is a different issue) because it implicitly affirms the principle of personal responsibility. This is evident also in Irena’s story. Irena’s identity was not cancelled by Nazis, because she was not ultimately a Jew but Polish. She was condemned to be executed but she escaped and could hide herself under a false identity. Could a Jewish person have done just the same? The answer is no, because Jews had not only to hide their personal identity, but also their group identity. In other words, Irena was persecuted according to any rule of law – although the law was obscene and unjust – she was not denied her citizen’s rights, while these rights were simply cancelled for Jewish people.

In ancient Greece, slaves were called “faceless”, aprosopon. The word that in Greek designates the face, prosopon, is also at the origin of the Latin word persona, person. The person is thus an individual with a face, this is to say, out of metaphor, that one becomes a person when she is identifiable. In modern terms, one could say that you are who your papers say you are. Take away those papers and you have no claimable

---

21 There is, however, an important debate among scholars as to what extent all categories were really included in the Declaration. See for instance S.M. Singham, 1994, “Betwixt Cattle and Men: Jews, Blacks, and Women and the Declaration of the Rights of Man,” in Dale Van Kley, ed., The French Idea of Freedom: The Old Regime and the Declaration of Rights of 1789, Stanford UP.
No political, civil and social right can be enforced on anonymous people. This was one of the main worries that probably drove Irena to protect the identities of the rescued children. Say, the need to preserve children’s identities was also the expression of the need to protect their citizens’ rights against Nazi barbarity. We now have to face a similar challenge on a global scale. The contemporary world is confronted with a huge mass of people with weak or absent identities. Most developing countries have weak and unreliable documents and the poorer in these countries do not have even those unreliable documents. In 2000 the UNICEF has calculated that 50 million babies (41% of births worldwide) were not registered at birth and thus without any identity document. Pakistan, Bangladesh and Nepal have not yet made child registration at birth mandatory notwithstanding the pressures of the international community. In what jars could we protect the identity of children dispersed by tsunami or displaced by one of the countless local wars in Africa? How could we protect their basic rights not to be trafficked, abused, and sold?

**The Pages of Testimony**

There was however, also another, deeper reason why Irena struggled to preserve identities of Jewish children. Not only because there would be no rights without personal identities, but also because there would not be family ties without names. We would lose our deepest roots without our names because they are more than simply identifiers. Names have to do with our inner humanity. It is not by chance that according to the Bible the first task that God gave to Adam (Genesis 2:19) was to name all species of creation.

The reader of the *Iliad* probably remembers the famous episode when *Diomed* encounters *Glaucus* on the battle-field and *Diomed* asks him who he is. *Glaucus*, a young warrior without any hope of surviving the fight against the noble and powerful *Diomed*, answers “Why ask me of my lineage? Men come and go as leaves year by year upon the trees. Those of autumn the wind sheds upon the ground, but when spring returns the forest buds forth with fresh vines. Even so is it with the generations of mankind, the new spring up as the old are passing away. If, then, you would learn my descent, it is one that is well known to many. There is a city in the heart of Argos …”. There is in *Glaucus*’ words the harrowing consciousness that nothing is permanent and that even the pride of belonging to a noble lineage is probably an illusion. Yet, for one of those reversals that are the secret of great poetry, this melancholic poem to human caducity becomes a compassionate praise of all humankind. *Diomed* was once hosted by *Glaucus*’ family and when the expert warrior recognizes it, he gives up crossing his sword with the young man, who had his life saved by his name.

Names crystallize history and stories, they are symbols that remind us that each one of us is the point of arrival of generations of men who lived, dreamt, loved, suffered, and deluded themselves before us. Names hold human history and are the hallmark of culture on the natural, merely biological, flow of human generations. They are what

---

22 Ironically enough, the Greek definition for slaves was echoed a few years ago by the French controversial legislation on aliens, called *sans-papiers* (the paperless), who originate primarily from poor African nations.
link humans both vertically – through generations – and horizontally – across families and communities. Without their names Jewish children rescued by Irena would have been deprived of their cultural identity, they would have become those naked bodies of which Agamben, the Italian philosopher, speaks. This was what Nazi persecutors tried to achieve by erasing identities in concentration camp inmates.

There is then a profound lesson to be learned by the fact that Irena’s name is now carved for ever – at least for that “ever” allowed by human caducity – on a plaque adjacent to one of the 2000 trees, symbols of the renewal of life, that have been planted on Har Hazikaron, the Mount of Remembrance, in Jerusalem. On the same mount, in the Hall of Names, there are the “Pages of Testimony”, symbolic gravestones, which record names and biographical data of millions of Shoah victims, as submitted by family members and friends, as a way for “remembering them not as anonymous numbers but as individual human beings”.

---


24 Erasing names and using anonymous codes for people recognition has always been an important instrument for dehumanizing people. In late ancien regime France, for example, those sentenced to hard labor were marked on the upper arm with ‘TF’ (for travaux forcés), with a life sentence being signified through the letter P (en perpétuité). UK offenders were sometimes branded on the thumb (with a ‘T’ for theft, ‘F’ for felon or ‘M’ for murder). In Primo Levi’s memoir, The Drowned and the Saved, he describes the tattoo as a “pure offense”, as a hallmark by which “slaves are branded and cattle sent to slaughter” (Levi, 1989:119). Yet few know that in the Nazi regime the larger group of compulsory tattooed people was not made up by prisoners but the Waffen-SS. All members of the Waffen-SS were required to have a tattoo on their left arm verifying their blood group. This included also any of the high ranking officers. Officially the purpose of the tattoo was to be able to perform a blood transfusion at the front to save a wounded man’s life. Yet the coincidence (the tattoo in gothic lettering was about 7 mm in length and was placed on the underside of the left arm, about 20 cm up from the elbow) is very suggestive: both untermensche and ubermenschen were hallmarked by Nazi regime. One could compare this event with a famous quotation from Hitler’s Mein Kampf in which he saw the “great thing” of his movement in the fact that sixty thousand men “have outwardly become almost a unit, that actually these members are uniform not only in ideas, but that even the facial expression is almost the same. Look at these laughing eyes, this fanatical enthusiasm and you will discover ... how a hundred thousand men in a movement become a single type” (http://www.tomeraider.com/ebooks/nonfiction/history/mein_kampf_the_struggle_ebook--BK382.php).

Acknowledgment

The editors wish to thank Dr. Bthaj Ajana who has served as an Associate Editor of this book, and Dr. Maciej Bazela who has supervised the last phases of the editing.
Biographies of Contributors

**Btihaj Ajana** is a PhD candidate at the London School of Economics and Political Science. Her thesis examines the recent scheme of national identity cards in the UK, exploring the biopolitical and bioethical implications of biometric technology. She holds a Bachelor degree in media studies and computing science, and a Master’s degree in digital media from the University of London.

**Loïc Bournon** has been the Director of the Information Systems division of Sagem Sécurité since its inception in July 2007. He started his career as an expert in cryptography within a governmental agency followed by a senior role in the domain of security consultancy. He initiated and managed a number of projects relating to the integration of security within administrative programs. He was also involved with the European Council in the auditing activities concerning new Member States. He has a number of publications in different journals (Revue Défense Nationale, CNRS, CELAR, Eurosec, FNTC, etc.) and is currently the president of EBIOS Club. He holds a PhD in cryptography.

**Manfred Bromba** started his professional career in 1968 with training as electronic technician at Nixdorf Computer AG, followed by studies in electrical engineering and physics at Paderborn University. After obtaining his doctorate and completing two further years in scientific research in the area of digital signal processing, he moved to Siemens Semiconductors in 1983. There, he was responsible for a series of product innovations in the field of multimedia such as Digital TV, Embedded DRAM, and MultiMediaCard™. In 1997, he moved to the Siemens Group “Private Networks” where he promoted the biometrics activities. Since 2003, he has been the eponymous CEO of the company Bromba GmbH which provides biometrics consulting and technology. He is also author of numerous publications and inventions.

**Daniela Caprino** graduated in Medicine at the University of Perugia in 1979 where she also obtained her specialization in Paediatrics in 1982. While attending the Paediatric Clinics of the General Hospital in Perugia she was committed to take care of patients affected by genetic disorders. Thus, she decided to widen and deepen her training in this field by attending the Paediatric Clinics of the Giannina Gaslini Children’s Hospital (Genova), a department that particularly focused on genetic disorders. In Genova, she gained the position of Senior Assistant at the Department of Haematology and Oncology of the Giannina Children’s Hospital in 1985. She focused on congenital bleeding disorders, promoting a new technical approach for carrier detection and prenatal diagnosis of haemophilia. Facing chronic disease, she developed a special interest in the psychological dimensions concerning the patients and related parents she was in contact with. For this reason, she decided to graduate in Psychology and Psychotherapy at the University of Genova. Now she is involved in psychological therapy for patients
affected by chronic diseases and cancer. She is author of many publications, mostly focused on the psychological aspects related to children affected with tumors.

Anne Carblanc joined the Organisation for Economic Co-operation and Development (OECD) in 1997 where she is responsible for analytical and policy work related to the security of information systems and networks and the protection of privacy. Prior to joining the OECD in 1997, she was Secretary General of the French data protection authority (the Commission Nationale de l’Informatique et des Libertés – CNIL). She had previously served ten years in the French judicial system both as a judge in charge of criminal investigations and as the Head of the criminal legislative unit in the Ministry of Justice. Ms Carblanc has a degree in modern languages and literature, a Master’s degree in Law, and qualified as a judge (Ecole Nationale de la Magistrature).

Ermelando V. Cosmi (1935–2007) was full ordinary professor of Obstetrics and Gynecology and chaired the Institute of Gynecology, Perinatology and Child Care of the University of Rome “La Sapienza”. He was President of the Bioethical Commission of the Italian National Research Council and Member of the Bioethical Committee of the Medical Association of Rome. He was founding President of the International Association of the New Technologies in Gynecology, Reproduction and Neonatology (ISONET) and president of the World Society of Perinatal Medicine. Ermelando was also Director of the Ettore Majorana International School in Erice of Perinatal Medicine and editor of several Books and journals, author of more than 100 peer reviewed papers and of more than 50 books.

Bernard Didier is currently Senior Vice President at Sagem Défense Sécurité SAFRAN Group. After graduating in engineering (ESB Paris), he undertook research and teaching activities in the field of information technology at l’Ecole Nationale Supérieure des Mines de Paris. He was one of the founders of SINAC, a technology transfer consultancy. In 1982, he set up MORPHO Systèmes, a business firm specializing in automated fingerprint processing which was bought by SAGEM in 1993.

Manfred Green holds BSc (Hons) in mathematical statistics from the University of Witwatersrand, MSc in operations research and MD from the University of Cape Town, and MPH and PhD in epidemiology from the University of North Carolina at Chapel Hill. He is board specialized in public health, occupational medicine and medical administration. His research interests include methodology in epidemiology and the epidemiology of chronic diseases, infectious diseases and bioterrorism. He has been director of the Israel Center for Disease Control in the Ministry of Health since 1994. He is also Professor of Epidemiology and Preventive Medicine in the Faculty of Medicine, Tel Aviv University and holds the Stanley and Diana Steyer Chair in Cancer Prevention and Control. He is the director of the Tel Aviv University Center for the Study of Bioterrorism.

Arnon Harel has a Master of Science in Information Technology from Clark University (Worcester, Massachusetts) and has more than ten years of experience in applying identification technologies for nationwide systems. As the concept initiator and the
program manager of BASEL Project for fully controlled, rapid and secured border crossing checkpoint between Israel and the Gaza Strip, he pioneered the combination use of biometrics and smartcards, using two biometric technologies simultaneously and conducting the first large-scale live field-test for biometric products. He is member of the Israeli committee for utilizing biometrics in governmental applications and co-author of the Israeli standard for applying smartcards in national and governmental ID documents.

Frank (Yeruham) Leavitt teaches bioethics and philosophy of the health and life sciences in the Faculty of Health Sciences, Ben Gurion University, Israel. He has served in the US Marine Corps (Res.) and in the Israeli Defense Forces, and currently volunteers in the Israeli Police. He has studied in Israeli yeshivot and at John Carroll, Toronto and Edinburgh Universities.

Luisa M.E. Massimo is the Director Emeritus of the Department of Pediatric Hematology and Oncology at the “G.Gaslini” Scientific Children’s Hospital of Genova, Italy. She is also Adviser for international affairs and adviser for Psycho-Oncology and had a long teaching career at the Medical School of the University of Genova. From 1997 to 2000 she was Expert of the NATO Life Science and Technology Panel in Brussels. She is Expert Reviewer for INTAS research proposals in Brussels, Expert Reviewer for EU, European Commission Framework Programme 7th research proposals in bioethics in Brussels, Director of the Courses of Pediatric Oncology at the International School of Scientific Culture “Ettore Majorana” in Erice, Sicily. Her current research interests are in Pediatrics, Pediatric Hematology and Oncology, Bioethics, Health Management, Psychology and quality of life. She is Author of more than 400 scientific articles, 187 of them quoted in PubMed, mostly related to the fields of Pediatric Oncology, Hematology, and Psychology, Co-Editor of several volumes. She is Founding Member and Honorary Member of many International Societies, mostly of Pediatrics, Oncology, PsychoOncology, Hematology and Immunology. She was also Councilor of the City Hall of Genova (1985–1990), and President of the National Cancer Research Institute-IST of Genova (1986–1994). She received numerous awards and prizes: the “Accademia dei Lincei” prize for Oncology in 1971; the “Barbara Bohen Pfeifer for Scientific Excellence” prize in New York in 1991; the Gold Medal of the Italian Republic for Merits in Public Health, in Rome Quirinale in 2004. She is Honorary Citizen of Baltimore, MD (15/9/1987) and “Dame” of the Knighthood Order of the Saints Maurice and Lazar, in acknowledgment of her activity in the field of Healthcare. She is quoted in Who’s Who in the World since 1982.

Emilio Mordini is a clinical psychoanalyst and founding director of the Centre for Science, Society and Citizenshio. He is an M.D. from the University La Sapienza of Rome. He was non tenue track Professor of Bioethics in the Medical School of the University of Rome “La Sapienza” (1994–2005), member (1994–2000) and secretary (2000–2003) of the Bioethical Commission of the Italian National Research Council. Emilio Mordini has served as a treasurer (1992–96) and a secretary (1996–98) of the European Association of Centres of Medical Ethics (EACME). He has also served as a member of the board of directors (1996–2000) of the International Association of Bioethics (IAB). Emilio Mordini has been coordinator of BITE (Biometric Identification
Technology Ethics), the first international action supported by the EC on ethical implications of biometrics, and he is currently coordinating a large multicentre international project on surveillance technologies, HIDE (Homeland Security, biometric identification and personal detection ethics). Emilio Mordini has been editor of six books, has published 84 articles or chapters of books in reviewed publications, 170 articles in non-reviewed journals, newsmagazine and newspapers.

Nikola Pavešić received his B.Sc. degree in electronics, M.Sc. degree in automatics, and Ph.D. degree in electrical engineering from the University of Ljubljana, Slovenia, in 1970, 1973 and 1976, respectively. Since 1970 he has been a staff member at the Faculty of Electrical Engineering in Ljubljana, where he is currently head of the Laboratory of Artificial Perception, Systems and Cybernetics. His research interests include pattern recognition, neural networks, image processing, speech processing, and information theory. He is the author and co-author of more than two hundred papers and three books addressing several aspects of the above areas. He was the recipient of the Mario Osana Award in 1974, the Vratislav Bedjanč Award in 1976, the Boris Kidrič Fund Award in 1982, and the Milan Vidmar Award in 1996. He is a member of IEEE, IAPR, the Slovenian Association of Electrical Engineers and Technicians (Meritorious Member), the Slovenian Pattern Recognition Society (Founder and first president), and the Slovenian Society for Medical and Biological Engineers.

Slobodan Ribarić received B.Sc. degree in electronics, M.Sc. degree in automatics, and PhD. degree in electrical engineering from the Faculty of Electrical Engineering, Ljubljana, Slovenia, in 1974, 1976, and 1982, respectively. He is currently a Full Professor at the Department of Electronics, Microelectronics, Computer and Intelligent Systems, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia. His research interests include Pattern Recognition, Artificial Intelligence, Biometrics, Computer Architecture and Robot Vision. He has published more than one hundred and fifty papers on these topics, and he is author of four books (Microprocessor Architecture, The Fifth Computer Generation Architecture, Advanced Microprocessor Architectures, CISC and RISC Computer Architecture) and co-author of one (An Introduction to Pattern Recognition). He is a member of the IEEE, ISAI and IAPR.

Sylvia Tomova received a Master’s degree in law in 1978 and a Master’s degree in public health in 2004. She has been Chief Legal Advisor of Medical University, Sofia since 1992. She is also member of Ethics Commission on Medical Research at the same university and member of Ethics Commission on Clinical Trials at The Ministry of Health, Sofia. She has been Secretary and now member of the Bulgarian Association on Medical Law and member of the Steering Committee on Bioethics at the Council of Europe. She participated in EU projects on data protection PRIVIREAL and PRIVILEGED. She is author of Medical law and Deontology (1992); Doctor, Patient, Society – Patient Rights and Medical Liability (1994); and Data Protection and Medical Research in European Countries (2005).

Irma van der Ploeg (PhD) holds degrees in philosophy and science and technology studies; as Associate Professor she is heading the Infonomics & New Media Research Centre at Zuyd University, Maastricht/Heerlen, The Netherlands. She has published
Contents

Preface: Life in a Jar vii
Emilio Mordini

Acknowledgment xv

Biographies of Contributors xvii

Introduction 1
Btihaj Ajana

Human Rights, Identity and Anonymity: Digital Identity and Its Management in e-Society 11
Anne Carblanc

Towards a Governance of Identity Security Systems 19
Bernard Didier and Loïc Bournon

Children’s Identity and Security 27
Luisa M. Massimo and Daniela Caprino

Privacy and Security 37
Frank J. Leavitt

Biometric Recognition: An Overview 43
Nikola Pavešić and Slobodan Ribarić

Biometrics: Security vs Privacy. A Scientific and Bioethical Point of View 57
E.V. Cosmi, P. Meloni, S. Marzano and R. Sacco

Biometrics, Identification and Practical Ethics 69
Arnon Harel

Machine-Readable Bodies Biometrics, Informatization and Surveillance 85
Irma van der Ploeg

The Biometric Society – Risks and Opportunities 95
Manfred U.A. Bromba

Ethical and Legal Aspects of Biometrics (Convention 108) 111
Sylvia Tomova

Subject Index 115

Author Index 117
### Author Index

<table>
<thead>
<tr>
<th>Author</th>
<th>Page</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ajana, B.</td>
<td>1</td>
<td>Marzano, S.</td>
<td>57</td>
</tr>
<tr>
<td>Bournon, L.</td>
<td>19</td>
<td>Massimo, L.M.</td>
<td>27</td>
</tr>
<tr>
<td>Bromba, M.U.A.</td>
<td>95</td>
<td>Meloni, P.</td>
<td>57</td>
</tr>
<tr>
<td>Caprino, D.</td>
<td>27</td>
<td>Mordini, E.</td>
<td>vii</td>
</tr>
<tr>
<td>Carblanc, A.</td>
<td>11</td>
<td>Pavešić, N.</td>
<td>43</td>
</tr>
<tr>
<td>Cosmi, E.V.</td>
<td>57</td>
<td>Ribarić, S.</td>
<td>43</td>
</tr>
<tr>
<td>Didier, B.</td>
<td>19</td>
<td>Sacco, R.</td>
<td>57</td>
</tr>
<tr>
<td>Harel, A.</td>
<td>69</td>
<td>Tomova, S.</td>
<td>111</td>
</tr>
<tr>
<td>Leavitt, F.J.</td>
<td>37</td>
<td>van der Ploeg, I.</td>
<td>85</td>
</tr>
</tbody>
</table>