## Thoughts on research ethics

Ari Sihvola

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Department of Electronics and Nanoengineering

**Aalto University School of Electrical Engineering** 

### **Ethics**

- Moral philosophy (practical philosophy)
  - right/wrong, good/evil, duty, virtue, values,...
- Duty-based vs. consequential ethics
- Applied ethics
  - political ethics, business ethics, animal ethics, bioethics, machine ethics, everyday-life ethics....
  - research ethics

## Aspects in research

- Preventing harm to research subjects
  - animals?
- Humans as research subjects
  - handling of personal data
- Technology for good and bad intentions
  - dual-use dilemma
- Military-connected research?

## Research ethics

Research integrity

(behaviour in the research community)

## Terminology

- Research ethics
  - tutkimusetiikka, forskningsetik
- Research integrity
  - rehellisyys, rehtiys, redlighet, hederlighet
- Responsible conduct in research
  - hyvä tieteellinen käytäntö
  - god forskningspraxis





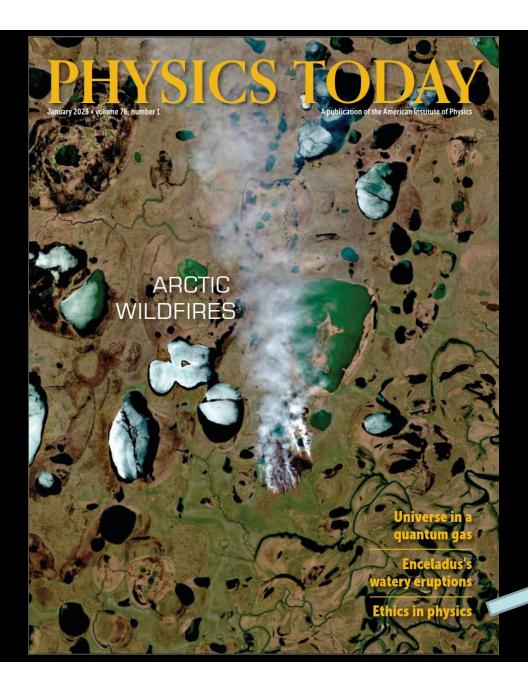
Hyvä tieteellinen käytäntö ja sen loukkausepäilyjen käsitteleminen Suomessa

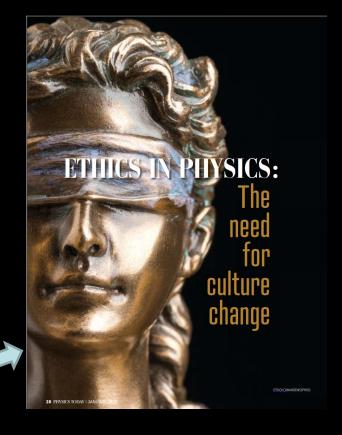
God vetenskaplig praxis och handläggning av misstankar om avvikelser från den i Finland

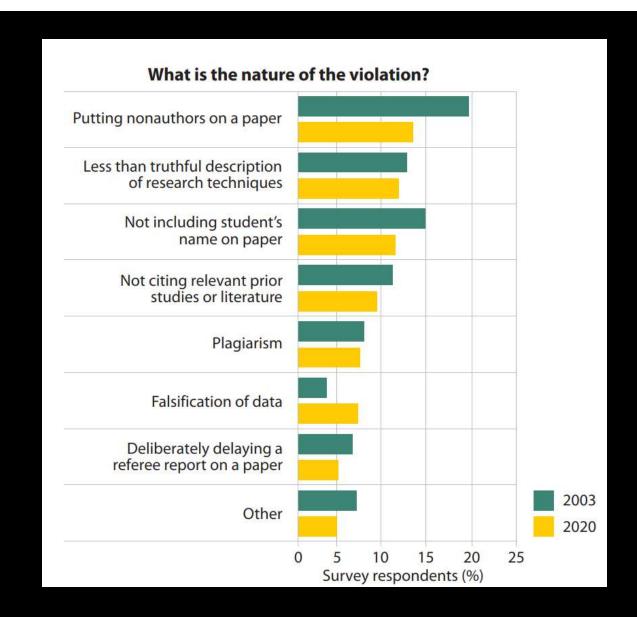
Responsible conduct of research and procedures for handling allegations of misconduct in Finland

## Issues with responsible conduct

- Integrity, meticolousness, accuracy in performing research and storing data
- Research permits, ethical committee
- Publication of results in open and responsible fashion
- Due credit given to other researchers when their results are used
- Sources of financing, conflicts of interest
- Data protection legislation







F.A. Houle, K.P. Kirby, M.P. Marder: *Physics Today*, January 2023, pp. 29–36.

## Responsible conduct violations

- Research misconduct
  - fabrication (misrepresentation)
  - plagiarism
  - misappropriation
- Disregard for responsible conduct of research
  - denigration
  - careless reporting
  - inadequate record-keeping
  - self-plagiarism



## Example

• Listing of (co)authors in a scientific publication

Astronomy & Astrophysics manuscript no. ms July 18, 2018 © ESO 2018

## Planck 2018 results. I. Overview, and the cosmological legacy of Planck

Planck Collaboration: Y. Akrami<sup>59,61</sup>, F. Arroja<sup>63</sup>, M. Ashdown<sup>69,5</sup>, J. Aumont<sup>99</sup>, C. Baccigalupi<sup>81</sup>, M. Ballardini<sup>22,42</sup>, A. J. Banday<sup>99,8</sup>, R. B. Barreiro<sup>64</sup>, N. Bartolo<sup>31,65</sup>, S. Basak<sup>88</sup>, R. Battye<sup>67</sup>, K. Benabed<sup>57,97</sup>, J.-P. Bernard<sup>99,8</sup>, M. Bersanelli<sup>34,46</sup>, P. Bielewicz<sup>80,8,81</sup>, J. J. Bock<sup>66,10</sup>, J. R. Bond<sup>7</sup>, J. Borrill<sup>12,95</sup>, F. R. Bouchet<sup>57,92</sup>\*, F. Boulanger<sup>71,56,57</sup>, M. Bucher<sup>2,6</sup>, C. Burigana<sup>45,32,48</sup>, R. C. Butler<sup>42</sup>, E. Calabrese<sup>85</sup>, J.-F. Cardoso<sup>57</sup>, J. Carron<sup>24</sup>, B. Casaponsa<sup>64</sup>, A. Challinor<sup>60,69,11</sup>, H. C. Chiang<sup>26,6</sup>, L. P. L. Colombo<sup>34</sup>, C. Combet<sup>73</sup>, D. Contreras<sup>21</sup>, B. P. Crill<sup>66,10</sup>, F. Cuttaia<sup>42</sup>, P. de Bernardis<sup>33</sup>, G. de Zotti<sup>43,81</sup>, J. Delabrouille<sup>2</sup>, J.-M. Delouis<sup>57,97</sup>, F.-X. Désert<sup>98</sup>, E. Di Valentino<sup>67</sup>, C. Dickinson<sup>67</sup>, J. M. Diego<sup>64</sup>, S. Donzelli<sup>46,34</sup>, O. Doré<sup>66,10</sup>, M. Douspis<sup>56</sup>, A. Ducout<sup>57,54</sup>, X. Dupac<sup>37</sup>, G. Efstathiou<sup>69,60</sup>, F. Elsner<sup>77</sup>,

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#### POSSIBLE NEW EFFECTS IN SUPERCONDUCTIVE TUNNELLING \*

B.D. JOSEPHSON Cavendish Laboratory, Cambridge, England

Received 8 June 1952

We here present an approach to the calculation of tunnelling currents between two metals that is sufficiently general to deal with the case when both metals are superconducting. In that case new effects are predicted, due to the possibility that elec-

number on the other side unchanged, and pair creation operators  $S_k^{+}$  which add a pair of electrons on one side leaving the quasi-particle distribution unchanged. The Hermitean conjugate destruction operators have similar definitions. The Sovera-

THE ASTROPHYSICAL JOURNAL LETTERS, 848:L12 (59pp), 2017 October 20 © 2017. The American Astronomical Society. All rights reserved.

#### **OPEN ACCESS**



#### Multi-messenger Observations of a Binary Neutron Star Merger\*

LIGO Scientific Collaboration and Virgo Collaboration, Fermi GBM, INTEGRAL, IceCube Collaboration, AstroSat Cadmium Zinc Telluride Imager Team, IPN Collaboration, The Insight-HXMT Collaboration, ANTARES Collaboration, The Swift Collaboration, AGILE Team, The 1M2H Team, The Dark Energy Camera GW-EM Collaboration and the DES Collaboration, The DLT40 Collaboration, GRAWITA: GRAvitational Wave Inaf TeAm, The Fermi Large Area Telescope Collaboration, ATCA: Australia Telescope Compact Array, ASKAP: Australian SKA Pathfinder, Las Cumbres Observatory Group, OzGrav, DWF (Deeper, Wider, Faster Program), AST3, and CAASTRO Collaborations, The VINROUGE Collaboration, MASTER Collaboration, J-GEM, GROWTH, JAGWAR, Caltech-NRAO, TTU-NRAO, and NuSTAR Collaborations, Pan-STARRS, The MAXI Team, TZAC Consortium, KU Collaboration, Nordic Optical Telescope, ePESSTO, GROND, Texas Tech University, SALT Group, TOROS: Transient Robotic Observatory of the South Collaboration, The BOOTES Collaboration, MWA: Murchison Widefield Array, The CALET Collaboration, IKI-GW Follow-up Collaboration, H.E.S.S. Collaboration, LOFAR Collaboration, LWA: Long Wavelength Array, HAWC Collaboration, The Pierre Auger Collaboration, ALMA Collaboration, Euro VLBI Team, Pi of the Sky Collaboration, The Chandra Team at McGill University, DFN: Desert Fireball Network, ATLAS, High Time Resolution Universe Survey, RIMAS and RATIR, and SKA South Africa/MeerKAT (See the end matter for the full list of authors.)

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#### **Abstract**

On 2017 August 17 a binary neutron star coalescence candidate (later designated GW170817) with merger time

B. P. Abbott<sup>1</sup>, R. Abbott<sup>1</sup>, T. D. Abbott<sup>2</sup>, F. Acernese<sup>3,4</sup>, K. Ackley<sup>5,6</sup>, C. Adams<sup>7</sup>, T. Adams<sup>8</sup>, P. Addesso<sup>9</sup>, R. X. Adhikari<sup>1</sup>, V. B. Adya<sup>10</sup>, C. Affeldt<sup>10</sup>, M. Afrough<sup>11</sup>, B. Agarwal<sup>12</sup>, M. Agathos<sup>13</sup>, K. Agatsuma<sup>14</sup>, N. Aggarwal<sup>15</sup>, O. D. Aguiar<sup>16</sup>, L. Aiello<sup>17,18</sup>, A. Ain<sup>19</sup>, P. Ajith<sup>20</sup>, B. Allen<sup>10,21,22</sup>, G. Allen<sup>12</sup>, A. Allocca<sup>23,24</sup>, P. A. Altin<sup>25</sup>, A. Amato<sup>26</sup>, A. Ananyeva<sup>1</sup>, S. B. Anderson<sup>1</sup>, W. G. Anderson<sup>21</sup>, S. V. Angelova<sup>27</sup>, S. Antier<sup>28</sup>, S. Appert<sup>1</sup>, K. Arai<sup>1</sup>, M. C. Araya<sup>1</sup>, J. S. Areeda<sup>29</sup>, N. Arnaud<sup>28,30</sup>, K. G. Arun<sup>31</sup>, S. Ascenzi<sup>32,33</sup>, G. Ashton<sup>10</sup>, M. Ast<sup>34</sup>, S. M. 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Bejger<sup>57</sup>, I. Belahcene<sup>28</sup>, A. S. Bell<sup>46</sup>, B. K. Berger<sup>1</sup>, G. Bergmann<sup>10</sup>, J. J. Bero<sup>58</sup>, C. P. L. Berry<sup>59</sup>, D. Bersanetti<sup>60</sup>, A. Bertolini<sup>14</sup>, J. Betzwieser<sup>7</sup>, S. Bhagwat<sup>44</sup>, R. Bhandare<sup>61</sup>, I. A. Bilenko<sup>62</sup>, G. Billingsley<sup>1</sup>, C. R. Billman<sup>5</sup>, J. Birch<sup>7</sup>, R. Birney<sup>63</sup>, O. Birnholtz<sup>10</sup>, S. Biscans<sup>1,15</sup>, S. Biscoveanu<sup>64,6</sup>, A. Bisht<sup>22</sup>, M. Bitossi<sup>30,24</sup>, C. Biwer<sup>44</sup>, M. A. Bizouard<sup>28</sup>, J. K. Blackburn<sup>1</sup>, J. Blackman<sup>48</sup>, C. D. Blair<sup>1,65</sup>, D. G. Blair<sup>65</sup>, R. M. Blair<sup>47</sup>, S. Bloemen<sup>66</sup>, O. Bock<sup>10</sup>, N. Bode<sup>10</sup>, M. Boer<sup>67</sup>, G. Bogaert<sup>67</sup>, A. Bohe<sup>38</sup>, F. Bondu<sup>68</sup>, E. Bonilla<sup>52</sup>, R. Bonnand<sup>8</sup>, B. A. 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Canizares<sup>66</sup>, K. C. Cannon<sup>81</sup>, H. Cao<sup>73</sup>, J. Cao<sup>82</sup>, C. D. Capano<sup>10</sup>, E. Capocasa<sup>39</sup>, F. Carbognani<sup>30</sup>, S. Caride<sup>83</sup>, M. F. Carney<sup>84</sup>, J. Casanueva Diaz<sup>28</sup>, C. Casentini<sup>32,33</sup>, S. Caudill<sup>14,21</sup>, M. Cavaglià<sup>11</sup>, F. Cavalier<sup>28</sup>, R. Cavalieri<sup>30</sup>, G. Cella<sup>24</sup>, C. B. Cepeda<sup>1</sup>, P. Cerdá-Durán<sup>85</sup>, G. Cerretani<sup>23,24</sup>, E. Cesarini<sup>33,86</sup>, S. J. Chamberlin<sup>64</sup>, M. Chan<sup>46</sup>, S. Chao<sup>87</sup>, P. Charlton<sup>88</sup>, E. Chase<sup>89</sup>, E. Chassande-Mottin<sup>39</sup>, D. Chatterjee<sup>21</sup>, K. Chatziioannou<sup>90</sup>, B. D. Cheeseboro<sup>41</sup>, H. Y. Chen<sup>91</sup>, X. Chen<sup>65</sup>, Y. Chen<sup>48</sup>, H.-P. Cheng<sup>5</sup>, H. Chia<sup>5</sup>, A. Chincarini<sup>60</sup>, A. Chiummo<sup>30</sup>, T. Chmiel<sup>84</sup>, H. S. Cho<sup>92</sup>, M. Cho<sup>76</sup>, J. H. Chow<sup>25</sup>, N. Christensen<sup>72,67</sup>, Q. Chu<sup>65</sup>, A. J. K. Chua<sup>13</sup>, S. Chua<sup>71</sup>, A. K. W. Chung<sup>93</sup>, S. Chung<sup>65</sup>, G. Ciani<sup>5,54,55</sup>, R. Ciolfi<sup>94,95</sup>, C. E. Cirelli<sup>52</sup>, A. Cirone<sup>60,80</sup>, F. Clara<sup>47</sup>, J. A. Clark<sup>77</sup>, P. Clearwater<sup>96</sup>, F. Cleva<sup>67</sup>, C. Cocchieri<sup>11</sup>, E. Coccia<sup>17,18</sup>, P.-F. Cohadon<sup>71</sup>, D. Cohen<sup>28</sup>, A. Colla<sup>97,35</sup>, C. G. Collette<sup>98</sup>,

B. P. Abbott<sup>1</sup>, R. Abbott<sup>1</sup>, T. D. Abbott<sup>2</sup>, F. Acemese<sup>3,4</sup>, K. Ackley<sup>5,6</sup>, C. Adams<sup>7</sup>, T. Adams<sup>8</sup>, P. Addesso<sup>9</sup>, R. X. Adhikan<sup>1</sup> V. B. Adya<sup>10</sup>, C. Affeldt<sup>10</sup>, M. Afrough<sup>11</sup>, B. Agarwal<sup>12</sup>, M. Agathos<sup>13</sup>, K. Agatsuma<sup>14</sup>, N. Aggarwal<sup>15</sup>, O. D. Aguiar<sup>16</sup> L. Aiello <sup>17,18</sup>, A. Ain <sup>19</sup>, P. Ajith <sup>20</sup>, B. Allen <sup>10,21,22</sup>, G. Allen <sup>12</sup>, A. Allocca <sup>23,24</sup>, P. A. Altin <sup>25</sup>, A. Amato <sup>26</sup>, A. Ananyeva <sup>1</sup>, S. B. Anderson <sup>1</sup>, W. G. Anderson <sup>21</sup>, S. V. Angelova <sup>27</sup>, S. Antier <sup>28</sup>, S. Appen <sup>1</sup>, K. Arai <sup>1</sup>, M. C. Araya <sup>1</sup>, J. S. Areeda <sup>29</sup> N. Arnaud<sup>28,30</sup>, K. G. Arun<sup>31</sup>, S. Ascenzi<sup>32,33</sup>, G. Ashton<sup>10</sup>, M. Ast<sup>34</sup>, S. M. 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<sup>1</sup>LIGO, California Institute of Technology, Pasadena, CA 91125, USA
                                              <sup>2</sup> Louisiana State University, Baton Rouge, LA 70803, USA
                                                <sup>3</sup> Università di Salerno, Fisciano, I-84084 Salerno, Italy
                          <sup>4</sup> INFN, Sezione di Napoli, Complesso Universitario di Monte S.Angelo, I-80126 Napoli, Italy
                                                   University of Florida, Gainesville, FL 32611, USA
                          <sup>6</sup>OzGrav, School of Physics & Astronomy, Monash University, Clayton, VIC 3800, Australia
                                             LIGO Livingston Observatory, Livingston, LA 70754, USA
<sup>8</sup> Laboratoire d'Annecy-le-Vieux de Physique des Particules (LAPP), Université Savoie Mont Blanc, CNRS/IN2P3, F-74941 Annecy, France
              <sup>9</sup> University of Sannio at Benevento, I-82100 Benevento, Italy and INFN, Sezione di Napoli, I-80100 Napoli, Italy
                       Albert-Einstein-Institut, Max-Planck-Institut f
ür Gravitationsphysik, D-30167 Hannover, Germany
                                            <sup>11</sup> The University of Mississippi, University, MS 38677, USA
                                  <sup>12</sup> NCSA, University of Illinois at Urbana-Champaign, Urbana, IL 61801, USA
                                                <sup>13</sup> University of Cambridge, Cambridge CB2 1TN, UK
                                           <sup>14</sup> Nikhef, Science Park, 1098 XG Amsterdam, The Netherlands
                                   <sup>15</sup> LIGO, Massachusetts Institute of Technology, Cambridge, MA 02139, USA
                        <sup>16</sup> Instituto Nacional de Pesquisas Espaciais, 12227-010 São José dos Campos, São Paulo, Brazil
                                           <sup>17</sup> Gran Sasso Science Institute (GSSI), I-67100 L'Aquila, Italy
                                        <sup>18</sup> INFN, Laboratori Nazionali del Gran Sasso, I-67100 Assergi, Italy
                                  <sup>19</sup> Inter-University Centre for Astronomy and Astrophysics, Pune 411007, India
               <sup>20</sup> International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bengaluru 560089, India <sup>21</sup> University of Wisconsin-Milwaukee, Milwaukee, WI 53201, USA
                                            <sup>22</sup> Leibniz Universität Hannover, D-30167 Hannover, Germany
                                                        <sup>23</sup> Università di Pisa, I-56127 Pisa, Italy
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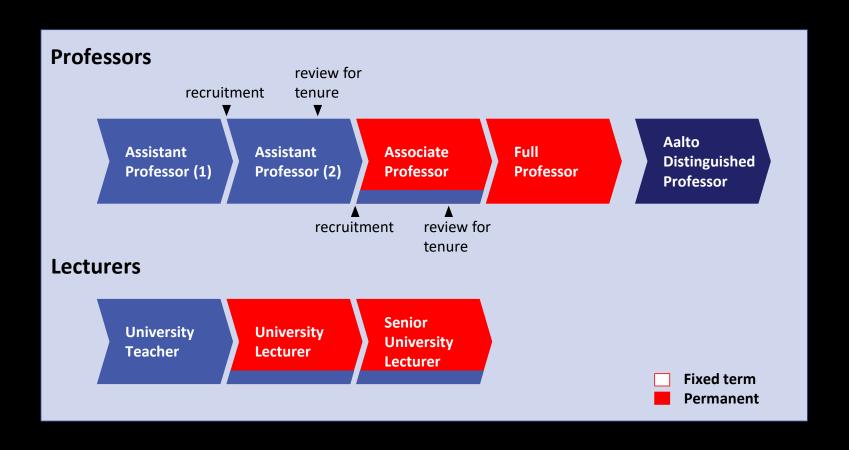
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931 Warsaw University of Technology, Institute of Electronic Systems, 00-665 Warsaw, Poland
                                                             932 Center for Theoretical Physics, Polish Academy of Sciences, 02-668 Warsaw, Poland
                                                                                                         933 RIKEN, Wako, 351-0198 Saitama, Japan
                       934 McGill Space Institute and Department of Physics, McGill University, 3600 rue University, Montreal, QC H3A 2T8, Canada
                                                      35 Department of Applied Geology, Curtin University, GPO Box U1987, Perth, WA 6845, Australia
                                           Department of Mechanical Engineering, Curtin University, GPO Box U1987, Perth, WA 6845, Australia
                                  <sup>937</sup> LIGO Laboratory West Bridge, California Institute of Technology, MC 100-36, Room 257, Pasadena, CA 91125

Department of Mechanical Engineering, Cardin Christip, Cardinal Christip
                                                                                                 LSST, 950 N. Cherry Avenue, Tucson, AZ 85719, USA
                                                           940 Max-Planck-Institut für Radioastronomie, Auf dem Hügel 69, D-53177 Bonn, Germany
                                                          941 NASA Goddard Space Flight Center, 8800 Greenbelt Road, Greenbelt, MD 20771, USA
                                                         <sup>942</sup> Department of Astronomy, University of Maryland, College Park, MD 20742-4111, USA
                                                                             <sup>943</sup> Inst. de Astrofísica de Canarias, E-38200 La Laguna, Tenerife, Spain
                                                               944 Universidad de La Laguna, Dpto. Astrofísica, E-38206 La Laguna, Tenerife, Spain
945 Space Telescope Science Institute, Baltimore MD, 21218
                     946 Instituto de Astronomía, Universidad Nacional Autónoma de México, Apartado Postal 70-264, 04510 México, CDMX, Mexico
                                                                                947 INFN—Istituto di Radioastronomia, Via Gobetti 101, I-40129, Italy
                                                               948 CSIRO Astronomy and Space Science, P.O. Box 76, Epping, NSW 1710, Australia
                                                 949 Max-Planck-Institut für extraterrestrische Physik, Giessenbachstrasse, D-85748 Garching, Germany
                                                                   Department of Physics, University of Bath, Claverton Down, Bath BA2 7AY, UK
                                              951 Center for Theoretical Astrophysics, Los Alamos National Laboratory, Los Alamos, NM 87545, USA
                                                                                                  952 SKA South Africa, Pinelands, 7405, South Africa
953 Department of Astronomy, Astrophysics, Cosmology and Gravity Centre, University of Cape Town, Private Bag X3 Rondebosch, 7701 South Africa
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## Risks of measurement

- Quantitative approach
- Number of publications
- Media publicity
- Number of related metrics (citations, etc.)

## **Aalto University Tenure Track**



## Tenure track



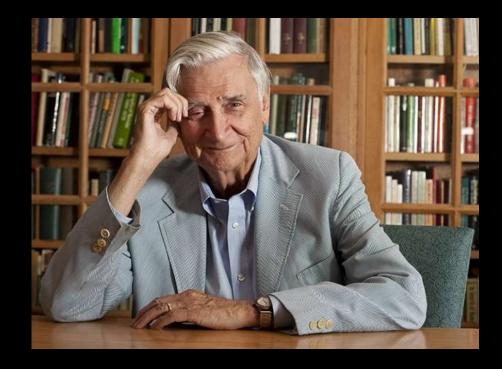
NEW YORK TIMES BESTSELLER

# EDWARD O. WILSON

PULITZER PRIZE WINNER

# LETTERS TO A YOUNG SCIENTIST

"WILSON PROVIDES EXACTLY THE RIGHT MENTORING FOR SCIENTISTS OF ALL DISCIPLINES—AND ALL AGES."—*NATURE* 



#### Twenty

#### THE SCIENTIFIC ETHIC

I HAVE COME TO the end of my counsel to you, and will now close these letters with advice on proper behavior in the conduct of your research and publication.

You are not likely to be directly pressed during your career on such largely philosophical questions as the propriety of creating artificial organisms or conducting surgical experiments on chimpanzees. Instead, by far the greatest proportion of moral decisions you will be required to make is in your relationships with other scientists. Entrepreneurial endeavor beyond the level of puttering creates difficulties other than the mere risk of failure. It will put you into a competitive arena for which you may not be emotionally prepared. You may find yourself in a race with others who have chosen the same track. You will worry that someone better equipped

and financed will reach the goal before you. When multiple investigators create an important new field simultaneously, they often create a golden period of excited cooperation, but in later stages, as different groups follow up on the same discoveries, some amount of rivalry and jealousy is inevitable. For you, if successful, there will be gentle competitors and ruthless competitors. There will be gossip and some protective secrecy. That should come as no surprise. Business entrepreneurs suffer when competitors beat them to the marketplace. Should we expect scientists to be different?

Finally, remember that you enter a career in science above all in the pursuit of truth. Your legacy will be the increase and wise use of new, verifiable knowledge, of information that can be tested and integrated into the remainder of science. Such knowledge can never be harmful by itself, but as history has so relentlessly demonstrated, the way it is twisted can be harmful, and if such knowledge is applied by ideologues, it can be deadly. Be an activist as you deem necessary—and you can be highly effective with what you know—but never betray the trust that membership in the scientific enterprise has conferred upon you.