Integrity Construction in China: Challenges and Prospects

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Illustrated by H. H. (adapted from Captain Underpants)
• Bold policy cannot go far \textit{without} well-crafted design and solid implementation.

• \textit{High utility} of misbehavior + \textit{low probability} of being caught $\Rightarrow$ escalating rule violations

• The law \textit{fails} to punish legion offenders.
Achievements
Integrity construction in China is on the move

- Chinese government has compelling interest in curbing scientific misconducts;
- China is putting paramount priority on integrity cultivation;
- China is making great strides on curbing misconducts and fostering integrity nationwide.
Unobstrusive micro-level data

- Global retraction data
  - WoS (Y1978-Y2013)
  - PMC (Y1978-Y2015)
- National revoked grants
  - Eg. NSSFC (Y2000-Y2015)

Researcher surveys

- Whistleblowing intention
  - Yangtz River Delta area:
  - Perception of misconducts
  - Shanghai

In-depth interviews
Challenges
**Challenge 1: Global norms vs. China’ reality**

How to

• demarcate borders;
• define the scope and types;
• determine associated penalties.

True for all countries, but the absence of a consensus of the above issues is a particularly thorny challenge for China.

• Eg: 34.4% biomedical researchers deem selective reporting is questionable but tolerable.

**Taxonomy of RM**

Appropriate; Questionable; Inappropriate; Blatant misconducts  

*(Hall & Martin 2019)*
Some research practices deemed inappropriate or misconduct in international scientific communities have been common in China for a long time.

Eg.  • A tale of two languages;
     • The reuse of texts in textbook publishing;
     • Honorary/obligatory authorship
Dilemma

Strict compliance

N

Strict compliance

Y

Herding effect

More misconducts

$$ wasted

Trust in science damaged

Govt reputation tarnished

International collaboration difficult

Severe penalties

Excessive strikes

(Too) much resistance

High standard

Unworkable rules

Legitimize non-compliance

Integrity construction reform futile/more difficult

① ②

③ ④

12
Challenge 2: Police patrol vs. Fire alarm

• Police patrol
  • Active detection of plagiarism and manipulated images via screening software (eg. CNKI; AI)
  • Pros: effective deterrence for certain types of misconducts
  • Cons: high enforcement cost with limited application settings
**Challenge 2: cont.**

- **Fire-alarm (dominant strategy)**
  - Wait passively for demands from above or contacted by whistle-blowers
  - Focus on headline-grabbing cases of misconducts revealed
  - Pro: Efficient & effective in the short run
  - Cons: Faded attention & weak deterrence for future violations
    - Recidivist (repeating fraudsters)
    - Herding effect (more misconductors)

BUT WHAT IF WE DID IT AND GOT AWAY...

..OR EVEN BE (RICHLY) AWARDED!
Table 1. Termination of Funded Projects by NSSFC: Y2000-Y2015

\[ N_1 = 42946; \quad N_2 = 420 \]

(a) Revoked Grants* Terminating Year

(b) Time Lag of Funds Revoked

(c) Revoked Grants* Application Year

(d) Proportion of Projects Terminated

Data source: authors’ work
Challenge 3: How to incentivize enforcement

Incompetence of dealing with *all* cases
(# S&T personnel; # pubs; # retractions)

Unwillingness of
1) adequate police patrol
2) scrupulous investigation
(Soiled reputation; attention competition; research evaluation)

Nonappreciation of whistleblowing
(A society valuing collectivism/interdependence)

Government agencies
(MOST & CASS NSFC, MOE etc)

Univ & PRIs
(>2800)

Scientists
(>6m)

Delegate

whistleblow
Eg. Whistleblowing intention

1. *Inaction* is quite common among Chinese scholars when they are aware of the existence of research misconducts.

   Figure 5.4 Possible reactions to perceived misconduct

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Persuading wrongdoers</td>
<td>52.23%</td>
</tr>
<tr>
<td>Internal report (within department, institution, or university)</td>
<td>28.47%</td>
</tr>
<tr>
<td>Take no action</td>
<td>24.26%</td>
</tr>
<tr>
<td>Collect evidence and wait to report</td>
<td>18.32%</td>
</tr>
<tr>
<td>Discuss with colleagues</td>
<td>16.83%</td>
</tr>
<tr>
<td>External report (journal publisher, research foundation, media, etc.)</td>
<td>11.14%</td>
</tr>
</tbody>
</table>

Data source: generated through SPSS by the author based on survey outputs.

2. High tolerance of misconducts is positively associated with low whistleblowing intention.

3. Choices of reporting misconducts are diversified. A large proportion would choose academic committee of their affiliations.

   - institutional-level academic committee (68.7%)
   - journal publisher (62.61%)
   - dean/chair of institution (42.61%)
   - university-level academic committee (39.13%)
   - research foundations (19.13%)
   - social media platforms (8.7%)
   - traditional media (1.74%)
Challenge 4: Balance science adv. & integrity

• Drivers of China’s scientific development (quan. & qua.)
  • R&D investment
  • Returnees and international collaboration
  ……
  • Publish or perish dogma (scientists, doctoral students, physicians)
    Eg. 107 retractions in Tumor Biology

“…Scientists all round the world also commit fraud. But the Chinese evaluation system is particularly susceptible to it.”
—The Economist, 2013
**Challenge 5: Guilt by association?**

- Hold collaborator accountable?
  
  Shifting paradigm of knowledge production => challenges for allocating both credits & responsibilities
- Team science + Science internationalization + IDR

More journals are demanding descriptions for DoL, but discerning who should be responsible for a collaborated piece is no easy task.
Challenge 5: Guilt by association?

Hold supervisor accountable?

• Demotion, suspension, debarments etc (due to failure to fulfill the responsibility of supervision)
  • Eg. Case of Mr. Z. (stripped of Ph.D. degree)
• Pros: Increase enforcement effectiveness; Reduce cases of whipping boy
• Cons: Unfair; Too much burden on supervisors
Research Governance Perspective

Policing mechanism
Fire alarm vs. Police patrol

Implementation
How to incentivize enforcement

Judging criteria
Global norms vs. China’s reality

Research Evaluation System
How to balance science adv and integrity

Shifting paradigm of knowledge production
Guilt by association?
Suggested Response 1: Apply tough tactics with limited non-retroactive rules on curbing misconducts

- Reach an agreement regarding the definition and scope of misconduct, undesirable research practices, and corresponding punishments and sanctions (MOST, CASS, MOE, NSFC, etc).
- Take into consideration of extent, type, field, and even timing of committed misconduct.
  - Distinguish severe frauds and lesser forms of misconducts
  - Focus on those most agreed upon and egregious kinds of misconduct (for now).
- A limited non-retroactive rule can be considered.
Suggested Response 2: Institutionalize integrity construction

- **MOST & CASS (leadership & commitment):**
  - Formulate workable rules, standards and guidelines compatible with international norms with inputs from scientific community;
  - Facilitate continuing open communication among stakeholders;
  - Coordinating inputs from other governing bodies in science

- **Institutions:**
  - Institutionalize procedures for enforcement;
  - Ensure that both whistle-blowers and the unproven accused are properly protected;
  - Make integrity education and training mandatory
Suggested Response 3: Incentivize enforcement via duty-power-benefits integration

• Fostering research integrity is optimally handled at institutional level (power of appointing and promoting researchers + responsibility of educating new generations of scientists)
  • Sitting idle in the face of misconduct 😞
  • Reacting vigorously against allegations of misconduct 😊
  • Cultivating proactively integrity training and education 😊

• Reward institutions and enforcers
  • Chief Integrity Officer; linked to national funding; earmarked grants; Best Practice Competition; other supporting measures etc.
Suggested Response 4: Embed team ethics into integrity education

• Ex ante training and education > ex post disciplining transgressors.

Increasing the awareness of team ethics

• PI: manage and coordinate collaboration (increasingly IDR & IC)
• Young scientists: data collection and validation. (Trust but Verify)

• Move beyond individual-centered ethics education

“The rise of team science, and the associated division of labor, likely produces efficiency effects on science . . . may make scientific findings more vulnerable to pathologies, whether mistakes or deliberate malfeasance.”

(Walsh, Lee & Tang 2019)
Suggested Response 5: Support rigorous research on integrity studies

- Empirical studies (for evidenced-based better decision making & evaluation)
- Comparative studies (to learn lessons and experience from other countries which have long experience in combating misconducts and integrity cultivating

“…very little has been written about research integrity in China in English language journals” (Zeng & Resnik 2009)
Prospects

• A responsible and innovative China is critical to global community.
• China’s integrity construction is on the move and will be continuing into future.
• For further advancement, systematic and orchestrated efforts from all stakeholders, within and beyond national borders, is a must.
Great thanks to my graduate students for data collection, cleaning and analyzing.

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