

## Scientific Popularization and the Translation of Economic and Financial Terminology –Finance and Development magazine a Critical Analysis-

التبسيط العلمي وترجمة المصطلحات الاقتصادية والمالية –مجلة التمويل والتنمية دراسة تحليلية نقدية-

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### Abstract:

The relationship between scientific popularization and translation is symbiotic; each process enhances the other's efficacy. Scientific popularization relies on effective translation to bridge linguistic gaps and make accessible content available to broader audiences. The main objective of this study is to highlight the relationship between translation and scientific popularization and their power to simplify economic and financial terminology in one of the well-known magazines in the world (i.e. *Finance and Development*, IMF). The main findings of this study consist of the magazine's specific style in simplifying and translating economic terminology through the use of many techniques, like: dialogues, pictures, anaphora, metaphors, and telling stories,... etc.

**Keywords:** Economic Terminology; F&D Magazine; IMF; Scientific Popularization; Translation

### ملخص:

تعد العلاقة بين التبسيط العلمي والترجمة تكافلية، فكل عملية تعزز فعالية العملية الأخرى. حيث يعتمد التبسيط العلمي على الترجمة الفعالة لسد الفجوات اللغوية وإتاحة المحتوى لجمهور أوسع. كما تعتبر المصطلحات الاقتصادية والمالية واحدة من أكثر المصطلحات العلمية التي طالما أرقّت المترجمين نظراً لمميزاتها الخاصة. ويتمثل الهدف الرئيسي من هذه الدراسة في إبراز العلاقة بين الترجمة والتبسيط العلمي ومدى قدرتها على تبسيط المصطلحات الاقتصادية والمالية في إحدى أهم المجالات المعروفة في العالم (مجلة التمويل والتنمية). وتكمن أهم نتائج هذه الدراسة في توضيح أهمية العلاقة بين التبسيط العلمي والترجمة وكذا إبراز أهم الأساليب التي تنتهجها مجلة التمويل والتنمية (التابعة لصندوق النقد الدولي) في تبسيط وترجمة المصطلحات الاقتصادية من خلال استخدام العديد من التقنيات مثل: أسلوب الحوار واستخدام الصور والرسومات البيانية والاستعارات ورواية القصص وغيرها من الأساليب.

**كلمات مفتاحية:** التبسيط العلمي، الترجمة، المصطلح الاقتصادي والمالي، مجلة التمويل والتنمية، صندوق النقد الدولي.

## **1. Introduction**

Scientific knowledge, a cornerstone of societal progress, is often shrouded in complex terminology and specialized jargon that can hinder its accessibility to the general public. The symbiotic relationship between scientific popularization and translation serves as a dynamic bridge, ensuring that the marvels of science transcend linguistic and cultural barriers, making them comprehensible and relevant to a diverse global audience. This study explores the intricate interplay between these two processes and its profound impact on democratizing knowledge. Academic references from diverse disciplines illuminate the significance of this relationship in enhancing the reach and impact of scientific advancements.

## **2. The Interplay of Scientific Popularization and Translation: A Catalyst for Knowledge Dissemination**

The two processes interplay in order to disseminate and simplify knowledge to non-experts, therefore, extending the scope of scientific terminology and bridging the accessibility gap.

### **2.1 Scientific Popularization**

Scientific popularization, a strategic effort to make scientific content more accessible, takes various forms, such as journalism, documentaries, and educational initiatives. This process is pivotal in rendering complex scientific concepts understandable to non-expert audiences. As Nisbet and Scheufele (2009) emphasize, effective popularization fosters informed public engagement with science, which is essential for democratic decision-making and public support for research endeavors.

### **2.2 Translation: Expanding Horizons and Facilitating Exchange**

Translation, as the conduit for cross-linguistic and cross-cultural communication, plays a pivotal role in disseminating scientific knowledge beyond its original language realm. This process enables researchers, educators, and enthusiasts worldwide to access cutting-edge research. According to Gombier (2004), translation enhances global collaboration by enabling the dissemination of research findings and facilitates the development of localized knowledge.

### **2.3 The Symbiotic Relationship: Amplifying Impact**

The synergy between scientific popularization and translation is evident in their mutual reinforcement. Effective scientific popularization, devoid of linguistic and cultural barriers, harnesses the power of translation to reach wider audiences. Similarly, translation without the context provided by popularization may result in the dissemination of incomprehensible information (Bucchi,2008).

## **2.4 Cultural Context and Ethical Considerations**

The interplay between scientific popularization and translation is also shaped by cultural nuances and ethical considerations. As Irwin (2008) argues, effective popularization and translation require sensitivity to local cultural norms and values, ensuring that the scientific content resonates with diverse audiences.

## **3. Aims of Scientific Popularization: Dissemination, Engagement, and Empowerment**

Opting for scientific popularization has many objectives, such as dissemination, engagement and empowerment of knowledge. The next lines unravels the aims of scientific popularization in a detailed way.

### **3.1 Democratizing Knowledge and Accessibility**

One of the primary aims of scientific popularization is to democratize knowledge by making it accessible to a wider audience. In doing so, it destroys barriers imposed by technical jargon and complex terminology, ensuring that scientific insights are comprehensible to non-expert individuals. According to Bauer (2009), scientific popularization aims to bridge the “knowledge gap” between experts and the general public, promoting a more informed and participatory society.

### **3.2 Fostering Public Engagement and Interest**

Scientific popularization aims to cultivate public engagement with science by sparking curiosity and interest in scientific discoveries. It uses compelling narratives, engaging visuals, and relatable analogies to draw readers or viewers into the world of science. Irwin (2008) argues that popularization serves as a medium to stimulate dialogue and interaction between scientists and the public, enriching the cultural landscape of science.

### **3.3 Empowering Informed Decision-Making**

Another vital aim of scientific popularization is to empower individuals to make informed decisions. By providing insights into scientific topics and their societal implications, popularization equips readers with the knowledge needed to critically evaluate issues related to health, environment, and technology. Wynne (1992) argues that popularization contributes to the democratization of expertise, allowing citizens to actively engage in debates and policy discussions.

### **3.4 Enhancing Science Communication and Literacy**

Scientific popularization also aims to enhance science communication and promote scientific literacy. By presenting scientific information in accessible ways, it encourages readers to develop an appreciation for science and its methodology. Nisbet and Scheufele (2009) emphasize that effective popularization contributes to scientific literacy, enabling individuals to understand and engage with complex scientific issues.

### **3.5 Addressing Ethical and Societal Considerations**

In line with these aims, scientific popularization also serves to address ethical and societal considerations associated with scientific advancements. It facilitates open discussions about the benefits and risks of emerging technologies, fostering a more informed public dialogue ( Gregory and Miller, 1998).

## **4. Finance and Development Magazine : Bridging the Gap in Economic and Financial Terminology**

Finance and Development magazine, published by the International Monetary Fund (IMF), serves as a noteworthy example of how scientific popularization can effectively bridge the gap between specialized economic and financial terminology and a broader readership. This study examines the efforts of Finance and Development magazine in popularizing economic and financial concepts, drawing insights from academic references to highlight its significance in enhancing public understanding.

### **4.1 Accessible Language and In-Depth Content**

Finance and Development magazine employs a balanced approach to its content, ensuring that it remains accessible while maintaining depth and accuracy. It uses clear and concise language to explain complex economic and financial concepts without compromising on the accuracy and integrity of the information. This approach aligns with the principles of effective popularization by simplifying technical jargon without oversimplification (Nisbet and Scheufele, 2009).

### **4.2 Real-World Relevance and Case Studies**

Finance and Development magazine often employs real-world examples and case studies to illustrate economic and financial concepts. This contextualization enhances readers' understanding by demonstrating how these concepts are applied in practical situations. Such an approach resonates with the principles of popularization that advocate for relatability and relevance (Bauer, 2009).

### **4.3 Visual Aids Integration**

The magazine employs visual aids, such as graphs, charts, and info-graphics, to simplify complex data and enhance visual understanding. These visual elements align with modern approaches to science communication, enhancing engagement and accessibility (Brossard and Lewenstein, 2010).

### **4.4 Policy Implications and Public Discourse:**

Finance and Development magazine often discusses the policy implications of economic and financial trends, contributing to public discourse on critical global issues. By elucidating how economic decisions impact societies, the magazine empowers readers to engage in informed discussions and make educated judgments on economic issues (Wynne, 1992).

## 5. The IMF's Role in Popularizing Economic and Financial Terms

The reader of Finance and Development's articles will easily realize that the staff of this magazine is working hard in order to write simplified economic articles that are available to as many readers as possible. This scientific simplification is reflected in multiple manifestations and techniques, most notably the use of well-known examples, metaphors, simplification of terminology and other editorial strategies.

### 5.1. Aspects of Popularization within Finance and Development's Articles

In order to popularize a scientific field of study, authors have recourse to many techniques or stylistic devices, such as: the use of examples, metaphors, personifications, dialogues, good titles, successful conclusions, telling stories, utilizing thought experiments and minimizing the use of terms,...etc.(Chouchani-Abidi, 2020)

Due to the complexity of economic and financial terms, scholars and specialists in this scientific field utilize many of the before-mentioned techniques to popularize issues belonging to Economy and Finance. Through the next paragraphs, we try to examine a number of these techniques through an analysis of what have been written in different volumes of Finance and Development magazine.

### 5.2 What Characterizes Finance and Development's Articles?

Finance and Development's editors, writing staff, and translators are, undoubtedly, selected according to certain qualities and qualifications. Their economic and financial writings and articles are characterized by a very good language and by the clarity of style. When tackling financial and economic notions, the staff of this magazine opts for:

#### 5.2.1 Choosing very Simple and Attractive Titles:

The titles utilized in Finance and Development magazine are characterized by clarity, briefness, attractancy and straightforwardness. Here are some examples of the titles with their Arabic translation:

**Table 1.** Examples of Some Titles

The title in English	The title in Arabic
What is the Informal Economy?	ما هو الاقتصاد غير الرسمي؟
Bubbling Up	تشكيل الفقاعات
Counting Women to Make Women Count	حساب عدد النساء ليصرن في الحسبان
The Secret Work Of Elephants	المهمة السرية للافعال

Finance and Development, December 2020, pp. 58-64<sup>1</sup>

It is easily noticed that the majority of the titles tend to attract the readers' interests to an economic or financial issue through the use of simple words, such as women, elephants and the verb to count,...etc. Furthermore, the lay person, nowadays, is

concerned with Informal Markets and the role of women in the present society; thus, titles containing these words are interesting and very successful in terms of attractancy.

### 5.2.2 The Use of Pictures, Colors and Real World Examples

Finance and Development magazine is familiar for its stunning pictures and genuinely organized diagrams. In the December 2020 issue, for instance, pictures of elephants in the trees with amazing colors and other examples impress the reader and encourage him to read the content of the article.

**Fig.1.** How much is one forest elephant worth?



Chami et al., December 2020, p.62

### 5.2.3 The Use of Dialogues

Authors of Finance and Development magazine articles usually utilize a dialogue style when trying to simplify economic and financial issues. Here are some examples:

Example 1:

“ Imagine being 22 years old now. You might have just finished college, be working or be juggling school, work, and family.”( Weir, 2020, p.56)

In this example, readers will imagine being involved in the text and its directions as mentioned by the writer.

Example 2:

“Advanced economies – think of Germany, Japan and the United States – are struggling with aging populations.” (Dewan and Ernest, 2020, p.23)

In the previous example, the verb ‘think’ leads to a real imagination about the status of the countries mentioned by the author. The magazine’s readers are accustomed to this type of dialogues, and it is very easy to track it as a frequent style through F&D publications.

Example 3:

“MY DEAR MOTHER,

I hope this letter finds you well, back in Italy. We are fortunate to have just visited; now we’ll go back to seeing each other on screen for a few months...I know you like the security of cash...etc.” (Tommaso, 2021, p.44)

This example is considered as a clear dialogue between a son and his mother where the son is popularizing economic notions using the form of a simple letter addressed to a lay person.

#### 5.2.4 Anaphora

In order to refer to something mentioned before, especially for emphasis or just to avoid repetition, authors have recourse to anaphora. Many examples could be tracked through F&D publications.

Examples:

“Informal economy → This phenomena → Informality”. (Deléchat and Medina, 2020, p.54)

In the last example, it is easy to understand that through anaphora the author of the article wants to simplify the notion of Informal economy for the reader.

#### 5.2.5 Metaphors

Metaphors are figures of speech in which a word or a phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them, as in “drowning in money” (Merriam-Webster, 2023). Many examples of metaphors exist in the articles published in Finance and Development, such as:

Eg.1: “While the ingredients of success vary in each country.”(Dorst, 2021, p.32)

Eg.2: “There was an enabling environment for these initiatives to germinate and quickly become reality.”(Dorst, 2021, p.32)

Eg.3: “...elephants are environmental engineers”. (Chami et al, 2020, p.60)

### 5.2.6 Concrete Examples

The reader of Finance and Development's articles will, easily, notice the use of concrete examples in order to explain or to justify arguments.

Example:

“For example, during economic downturns uncertainty often erodes consumer confidence....”(Jahan, 2014, p.53)

### 5.2.7 Successful Conclusion

The frequent reader of the magazine's articles feels no difficulty to grasp the main ideas of the topics discussed within these articles, especially through the conclusions summarizing writers' arguments and their brilliant final touch, leading to the success of these articles.

### 5.2.8 Scientific Terms' Use

Through our inspection of the journal's different numbers, we have noticed its use of many scientific and economic terms in particular. However, it must be pointed out that its use is not excessive. Examples of these terms (taken from different articles of F&D magazine) are as follows:

GDP: إجمالي الناتج المحلي

Annual turnover: حجم حركة التعامل السنوي

Real assets: عقارات

The subprime أزمة الرهن العقاري منخفض الجودة

Inflation: التضخم

Many other terms exist in the magazine's articles; however, the reader easily feels familiar with their meanings.

### 5.2.9 Personification

Personification is a literary device where non-human entities or abstract concepts are attributed with human-like qualities or actions (Hornby, 1995).

Example: “Inflation, **the silent thief** of purchasing power, **creeps** into the wallets of consumers, eroding their hard-earned savings.” (Georgieva, 2020, p.11)

Explanation: In this example, inflation is personified as a “silent thief” that “creeps” into wallets, portraying it as a stealthy and harmful force that affects consumers' finances.



## 6. Critical Analysis of the Translations of Finance and Development Magazine's Articles

At this stage of the study, a sort of comparison between the English version of the some articles and their Arabic translation will be made in order to investigate how successful the translator rendered the meaning, and whether or not, he succeeds to render a scientifically popularized text in the target language and what type of techniques he uses.

Example n° 1:

Original text: “ From the Mississippi and the South Sea bubbles of the early 1700s to the subprime and Chinese excesses of the 2000s.” (Natalucci, 2020, p.64)

الترجمة:

" من فقاعتي الميسيسيبي والبحر الجنوبي في أوائل القرن الثامن عشر إلى أزمة الرهن العقاري منخفض الجودة وفرط الإئتمان الصيني في أوائل القرن الحادي والعشرين "

### The Analysis of Scientific Popularization Technique and its Translation

Having recourse to a documentary research on internet about the term “ subprime”in Arabic, the translator easily finds the equivalent " الرهن العقاري " as a perfect one. However, the problem remains as a difficult term even in Arabic. The translator cleverly linked the term to its context, especially to what the author of the text describes as “speculative financial crises”. The translator made a documentary research about “subprime” as a financial crisis. After understanding the real meaning of the term, he opted for an addition of the word " أزمة " and to an explanation of this crisis in Arabic as " منخفض الجودة ", which is considered as a good effort in the Arabic language to scientifically popularize the term “subprime”.

Example n°2 :

Original text: “ the first component of the bubble triangle is the marketability of assets – how easily assets can be purchased and sold -”.(Natalucci, 2020, p.64)

الترجمة:

" والعنصر الأول من مثلث الفقاعات هو إمكانية تسويق الأصول – أي مدى سهولة شراء الأصول وبيعها- "

### The Analysis of Scientific Popularization Technique and its Translation

The translator in the precedent example had recourse to anaphora in order to simplify the meaning of “ marketability of assets” using other words between two dashes to explain the first term « marketability ». However, we notice that the second term « assets » was not simplified.

In terms of translation, we can notice that the translator opted for a shift as translation procedure twice: the first, by the use of the Arabic noun السهولة as an

equivalent of the English adverb “ easily”; the second, by the use of the Arabic noun الشراء as an equivalent of the English verb “ can be purchased”.

Example n°3:

Original text: “ This is the “butterfly defect” of globalization, the systemic risk endemic to our hyperconnected world...” (Goldin, 2020, p.06)

الترجمة:

" وهذا هو ما يطلق عليه "تأثير الفراشة" الناتج عن العولمة، أي المخاطر النظامية المتوطنة في عالمنا شديد الترابط...."

### The Analysis of Scientific Popularization Technique and its Translation

In this example, anaphora is also clear in the expression “the systemic risk endemic to our hyperconnected world,” which can be considered as a simplification of the “butterfly effect” as an economic notion. However, the most remarkable is the replacement of dashes by commas.

When considering the Arabic translation, we can notice the addition of " ما يطلق عليه " a real gain in translation and the expression "الناتج عن", enabling the translator to render the real meaning. However, the use of the word "هو" in the beginning of the sentence is considered as literal translation of the verb “ is,” which can be easily omitted without affecting the structure and the meaning of the target text.

Example n°4:

Original text: “ ... aggregate demand – measured as the sum of spending by households, businesses, and the government- is the most important driving force in an economy.” (Jahan, 2014, p.53)

الترجمة:

"... ان الطلب الكلي – مقيسا بمجموع نفقات الأسر والشركات والحكومة – هو أهم قوة دافعة للاقتصاد."

### The Analysis of Scientific Popularization Technique and its Translation

Anaphora also exists as technique in the last example, especially with use of the dashes, in order to explain the notion “aggregate demand”. However, the use of the nominal sentence in the Arabic translation was not successful "إن الطلب ..... هو أهم قوة". The use of a verbal sentence in arabic is the best choice, such as « يعد الطلب... أهم قوة ».

Example n°5:

Original text: “ The benefits can be seen at Sta Twig, an India-based company that has piloted the use of blockchain ledgers to track deliveries of vaccines to children.” (Sonmez, 2020, p.43)

الترجمة:

" ونرى منافع هذه التكنولوجيا في الهند حيث يقع مقر شركة Sta Twig التي استخدمت دفاتر الحسابات الرقمية القائمة على تكنولوجيا البلوك تشين لتتبع وصول اللقاحات إلى الأطفال."

### The Analysis of Scientific Popularization Technique and its Translation

In this example, the simplification of the meaning can only be noticed in the Arabic translation of the expression “blockchain ledgers”. In the Arabic version, the translator added the word "الرقمية" to the word “ledgers” in order to keep talking about the same context of digital money, for the word “ledgers” means also an ordinary register. Furthermore, to borrow the word “blockchain” to the Arabic version might affect the reception of the real meaning. For that reason, the translator has recourse to an explanation as follows: "القائمة على تكنولوجيا..." in order to show the fact that « blockchain » is a technological tool.

Example n°6:

Original text: “For example, during economic downturns uncertainty often erodes consumer confidence[...]”(Jahan, 2014, p.53)

الترجمة:

"فعلى سبيل المثال، يؤدي عدم اليقين خلال فترات الهبوط الاقتصادي إلى تآكل ثقة المستهلكين غالباً[...]"

### The Analysis of Scientific Popularization Technique and its Translation:

As mentioned before, to have recourse to examples, especially concrete ones, is one of the techniques utilized in scientific popularization.

In the translation of the last example, we can notice the following:

First of all, having recourse to modulation in "الغموض" instead of "عدم اليقين" as an equivalent for « uncertainty » might be better than a literal translation. Also, the addition of the word "فترات" explains the temporary nature of economic downturns, which is not clear in the source text. Finally, the use of the singular instead of the plural in "المستهلكين consumer" is very familiar in Arabic.

## 7. Conclusion

In conclusion, the dynamic relationship between scientific popularization and translation forms an essential nexus that democratizes knowledge dissemination. Scientific popularization enhances accessibility by simplifying complex concepts, while translation transcends linguistic boundaries, enabling global engagement with research findings. This symbiotic partnership resonates with the essence of scientific endeavor – to illuminate the unknown and share its brilliance with all corners of the world. As this relationship continues to evolve, it reinforces the essential role of science in shaping our collective understanding of the universe.

The aims of scientific popularization extend beyond mere communication to encompass the democratization of knowledge, fostering public engagement, and empowering individuals to participate in discussions about science’s role in society. By drawing on academic references across various fields, this study highlights the significance of scientific popularization in cultivating an informed and scientifically literate citizenry. As science continues to shape our world, the pursuit of these aims

remains essential for fostering meaningful connections between scientific advancements and the broader public especially in economics.

Finance and Development magazine's efforts in popularizing economic and financial terminology exemplify the successful marriage of specialized knowledge and accessible communication. By utilizing approaches that emphasize clarity, relevance, visual aids, and policy discourse, the magazine empowers its readers with a deeper understanding of economic issues. This serves as a testament to the magazine's role in bridging the gap between economic expertise and public engagement, aligning with the goals of scientific popularization. The translation efforts of these scientifically popularized articles revealed the translators' mastery of the economic and financial field, a characterized choice of the terminology in the Arabic language, and an understandable style both for the inexperienced or the expert.

## 8. Endnote

<sup>1</sup> In this table the titles are taken from different articles (pp. 58-64) of the same volume as follows :

The reference of the first title:

Deléchat, C ; Medina, L. (December2020). “What is the Informal Economy?.” *Finance and Development*:  
54-55.

The reference of the second title:

Natalucci, F. ( December 2020). “Bubbling Up.” *Finance and Development*: 64.

The reference of the third title:

Kochhar, K. (2020). “Counting Women to Make Women Count.” *Finance and Development*:  
63

The reference of the fourth title:

Chami, R., C. Fullenkamp, T. Cosimano, & F. Berzaghi ( 2020). “The Secret Work of Elephants.” *Finance and Development*: 58-62.

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