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### Tropes in translation

*An analysis of Dutch creative collocations and compounds translated into English*

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# 11

## On randomness<sup>75</sup>

### ABSTRACT

Andrew Chesterman's 2008 article "On Explanation" examines what it means to explain translational phenomena. In doing so, it explores the nature of explanation itself and raises one crucial question: How much is beyond explanation? In other words, to what extent could translational phenomena be due to mere chance? This article addresses this question by drawing on six landmark experiments within the field of psychology. These experiments suggest (1) that we, as translators, might unknowingly be injecting random elements into our translations, and (2) that we, as Translation Studies scholars, might be 'seeing' causes in that randomness where there are none. This article also draws on psychologist Daniel Kahneman's ideas about the 'illusion of causation' and on Nassim Taleb's definition of randomness within the humanities and social sciences. It concludes by arguing that retrospective explanations of translations should pay far more than lip service to the notion of chance.

Explanations are ubiquitous, come in a variety of forms and formats, and are used for a variety of purposes. Yet, one of the most striking features about most explanations is their limitations. For most natural phenomena and many artificial ones, the full set of relations to be explained is enormous, often indefinitely large and far beyond the grasp of any one individual.

(Keil 2006, p. 235)

### 11.1 Introduction

In 1985 Ria Vanderauwera published a much-cited work called *Dutch Novels Translated into English: The Transformation of a "Minority" Literature*, in which she described various forms of normalisation discovered in the English translations of a corpus of Dutch novels. The explanatory framework she used to account for her findings was grounded in polysystems theory and the ideas of the manipulation school. In other words, Vanderauwera explained normalisation largely in terms of translation norms and the pressures imposed by various cultural institutions including publishing houses.

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<sup>75</sup> This chapter was first published as a paper in *Target* 30:1 (2018).

The years following Vanderauwera's work witnessed a boom in corpus and case studies on literary translation with a concomitant drive to explain the data. Whilst a number of studies continued to explain literary translations in terms of norms (e.g., Laviosa 2002, p. 57), cultural forces (e.g., Lefevere 1992; Bassnett and Lefevere 1998), or the unconscious (e.g., Venuti 2002), the last thirty years have seen a growing interest in other types of explanation too. Translation Studies (henceforth TS) scholars with an interdisciplinary bent have been suggesting possible new sources of explanation to be had from areas such as psychology (e.g., Jääskeläinen 2002; Hubscher-Davidson 2009), cognitive science (e.g., House 2013) and neuroscience (e.g., Tymoczko 2012). In addition, TS scholars with a philosophical bent have been probing the nature of explanation itself (e.g., Pym 1998; Chesterman 1998, 2008; Brownlie 2003). These studies have enriched the discipline immensely but at the same time show how the search for explanations is a quest that never ends.

This paper is intended for anybody who, like the present author, is investigating the linguistic features of a parallel corpus of literary texts and might be asked to 'explain' their data in terms of the 'wider context,' involving recent or not-so-recent past events. It argues that any attempt to 'explain' the linguistic features of translations in retrospect must take randomness or chance<sup>76</sup> seriously into account. It is inspired by Andrew Chesterman's 2008 paper "On Explanation" and his eponymous lecture delivered in 2011 (uploaded to Anthony Pym's educational channel in 2014). However, it departs from Chesterman in one important respect: whereas Chesterman raises the subject of randomness in relation to quantum physics, this paper follows Taleb (2010) in adopting a definition of randomness that is more directly relevant to the social sciences and humanities.

This paper is organised as follows: Section 11.2 summarises Chesterman's ideas on explanation (themselves a synthesis of ideas inherited from linguist William Croft and from philosophers Wesley Salmon and Georg von Wright) and his concerns about randomness. Section 11.3 sketches the distinction between two broad types of randomness, namely, true randomness and randomness related to incomplete information. Section 11.4 introduces Kahneman's work on the 'machinery of cognition' and cognitive errors, and explores how these might relate to randomness. Section 11.5 describes six psychological experiments which illustrate cognitive errors. Section 11.6 relates these experiments to translation and translation scholarship, arguing that randomness should be given pride of place in our retrospective accounts of translated texts. Section 11.7 provides some concluding remarks.

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<sup>76</sup> The terms 'chance' and 'randomness' are being used interchangeably here.

## 11.2 Chesterman on explanation

The following is an attempt to summarise the main points of Chesterman's 2008 article and 2011 lecture. Like any attempt to summarise, it runs the risk of oversimplification. Readers who are interested in pursuing these ideas are therefore urged to consult the originals.

Chesterman begins both his article and lecture by emphasising the pragmatic nature of explanation: the success of an explanation can be measured by how well it satisfies the questioner's desire to know. According to such a pragmatic view, myths count as explanations too. But if "an explanation is indeed true, it also contributes to knowledge" (Chesterman 2008, 364). In an attempt to show how explanations can contribute to knowledge, Chesterman draws on the theories of Croft (as given in Halverson 2003, Salmon 1998 and von Wright [1971] 2004). Following Croft, he starts by challenging the distinction between description and explanation. Explanation is not necessarily something beyond description: by describing, defining, ordering, categorising and generalising we can reduce our sense of puzzlement; all these things give rise to the feeling of having had something explained and thus to a feeling of understanding (*ibid.*).<sup>77</sup>

Beyond description and generalisation is causal explanation. Following von Wright, Chesterman posits four types – (1) causal proper (the preserve of the hard sciences), (2) quasi-causal, (3) teleological and (4) quasi-teleological (frequently used in biology) – arguing that of the four types only the second and third are basic to TS. But where does the taxonomy discussed above come from? Chesterman suggests that scholars like von Wright and Salmon are the intellectual descendants of Aristotle, whose work on causation laid the foundations for how we think about explanation in the humanities today (p. 370). Aristotle posited four types of causes: material cause, final cause, formal cause and efficient cause, which to a large extent overlap with the categories already discussed. For a fuller account of Aristotle's taxonomy, as interpreted by scholars today, see Pym (1998), Siobhan Brownlie (2003) and Chesterman (2008).

Having explored different ways of explaining, Chesterman is at pains to point out that TS should not rely on one type of explanation alone because "most, if not all, explanations are only [explanations] to some extent" (Chesterman 2008, p. 365). Appealing to the underdetermination thesis (the view that for any given set of observations, more than one explanation is possible),<sup>78</sup> he concludes that multiple

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<sup>77</sup> In the lecture version of "On Explanation," Chesterman (2011) actually proposes four broad types of explanation: generalisation, causation, unification and contextualisation. In the article version (2008), contextualisation is subsumed under unification. I have kept to the classification given in the article.

<sup>78</sup> See also Anthony Pym's Chapter 6 "Uncertainty" in his *Exploring Translation Theories* (2010,

explanations might get us closer to the truth. As an example of good practice, he cites Siobhan Brownlie (2003) who “uses four sources of explanation for observed characteristics in different English translations of some French philosophical texts” (Chesterman 2008, p. 376).

In addition to exploring the relationship between description and explanation, Chesterman also makes us think about the relationship between explanation and prediction, arguing that it is often easier to explain than to predict because explanations can be found after the event. In his lecture he gives an example of a farmer falling through the ice of a frozen lake in Finland:

When farmer Jones goes over the ice in his tractor and drowns [...], I can easily explain that he did it because he thought the ice was thicker than it really was. But it would have been much too difficult to predict that [...] it would have been precisely [farmer Jones] going out over the ice. (transcribed from Chesterman 2011)

Chesterman ends both his talk and his article with one crucial caveat: some things are beyond explanation because of the role played by chance. Twentieth-century developments in quantum physics, he warns us, just go to show how much of what we take to be certain is actually random. He substantiates his claim by quoting Nobel laureate physicist Max Born as cited in Kaplan and Kaplan (2006, p. 277):

I think chance is a more fundamental conception than causality; for whether, in a concrete case, a cause-effect relation holds or not can only be judged by applying the laws of chance to the observation. (Chesterman 2008, p. 378)

In his talk, Chesterman then goes on to warn us that if the hard sciences are plagued by randomness, then this will certainly be the case for the social sciences. In the next section we explore this warning further.

### 11.3 Randomness and its relation to TS

A good place to begin our exploration is by noting that Chesterman only talks about randomness *in general*. It is useful, however, to distinguish between two sorts: (1) true or intrinsic randomness (e.g., Brownian motion, the haphazard motion of particles in liquid or gas) and (2) randomness which has to do with lack of information (e.g., contextual or subconscious factors which are not known and not manifestly relevant to the task at hand). No amount of information can reduce the first type of randomness, but the second type of randomness should be reduced

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pp. 90–119).

once more information is known. At least in theory. However, as will be argued later, when it comes to retrospective explanation the amount of unknown information (e.g., contextual or subconscious factors which are not manifestly relevant to the task at hand) might be so vast that the distinction between the two types of randomness could be considered immaterial.

The idea that seemingly task-irrelevant factors can affect translation is not new to TS. In his analysis of Alan Bass's translation of Derrida, Venuti (2002, p. 39) argued that the translator's slip of the pen<sup>79</sup> could be seen as the covert fulfilment of a wish: "The signifying chain created by the translator [...] replaces it with the translator's own unconscious desire, a desire for a particular meaning."

Douglas Robinson (1991, p. 36) argued that the way we translate "is always idiosomatically grounded," that is, grounded in a "body response" or gut reaction to the text and to what counts as equivalence. Moreover, these responses are often "personal, unique, based on [our own] idiosomatic experience" (ibid.) and as such also hidden from view.

Writers like these, beacons of the translator's turn, paved the way for including emotion into the discourse about translation. A later example is Hubscher-Davidson (2013), who appealed to the TS community to consider the effect that emotional intelligence and personality have on the output of translators and interpreters.

But more recently Chantal Wright (2016, pp. 64–65), following Clive Scott, suggested that beyond the subconscious, beyond bodily responses and personality types, there are many other seemingly irrelevant factors that might impinge upon the cognitive task of translation:

The text is reborn [...] through a particular person in a particular time and place. That time and place are much more specific than the UK in the second decade of the twenty-first century. As I read, I have "moments of turning away" [Scott 2012, 59], so for example, the fact that I am translating a particular text while sitting in the Shakespeare Institute in Stratford-upon-Avon on a rainy but warmish October day, when the heating inside is overly eager, making it hard for me to concentrate, while outside the slow-moving gardener spreads out an old embroidered green tablecloth to catch the hedge clippings, and an orange tabby who must belong to one of the neighbouring houses meows to be allowed to enter the world of books (I should wash my hands before I stroke my own cats when I return home, just in case she has fleas or ringworm), this fact will form part of my reading experience,

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79 In his translation, Bass used the demonstrative *that* to translate the French *un*, which according to Venuti completely reversed Derrida's intended meaning.

and “what is autobiographical in reading becomes compositional” (ibid., 67) and hence will influence the text that I create.

Impinging upon cognition here is the rain, the heating, the slow-moving gardener, the cat and the translator’s desire to wash her hands, etc.; and all these things could potentially interfere with the cognitive task of translating. It is (the processing of) contextual factors like these – factors which do not specifically relate to emotions but to what Kahneman calls more generally “the machinery of cognition” – that we address next. Section 11.4 explains what Kahneman means by “the machinery of cognition”; and Section 11.5 presents a number of landmark experiments showing this machinery at work and, more importantly, the errors to which it is prone.

#### **11.4 Daniel Kahneman on the machinery of cognition and cognitive errors: System 1 and 2**

In his book *Thinking, Fast and Slow* (2011)<sup>80</sup> Nobel laureate Daniel Kahneman explores how cognitive errors arise out of the “machinery of cognition.” This machinery is made up of two distinct ‘systems’:<sup>81</sup> system 1 and system 2. System 1 produces everything that is automatic, from adding  $2 + 2$  to recognising an angry face. It is fast and it is associated with cognitive ease. Most of the time system 1 does the job, but for more complicated tasks system 2 is required. System 2 is slow and effortful, and is associated with cognitive strain. It presides over tasks like logical reasoning and complex computations (for instance, mentally calculating  $6213 \div 8$ , or translating a difficult text). Errors of reasoning can arise when we apply system 1 (i.e., quick heuristics) to problems which require system 2 (i.e., slow methodical thought). These errors of reasoning have proven to be a major source of irrationality and they influence us all everyday (ibid.). Section 11.5 provides examples.

The idea that irrationality is born out of the machinery of cognition – an idea which goes back to Kahneman’s collaboration with Amos Tversky in the 1970s – formed a radical break with the thinking of the time. Looking back almost 40 years later, Kahneman (2011, p. 15) writes:

Social scientists in the 1970s broadly accepted two ideas about human nature. First, people are generally rational, and their thinking is normally sound. Second, emotions such as fear, affection, and hatred explain most of the occasions on

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80 My presentation of Kahneman’s ideas can be nothing more than a quick sketch; for a full account, readers are referred to Kahneman (2011) and to Kahneman and Tversky (1974).

81 ‘Systems’ is in quotation marks here because they have no physical counterpart in the brain; system 1 and system 2 are just shorthand for the collections of mental processes which produce, respectively, fast and slow thinking. The systems have no agency.

which people depart from rationality. Our article [Kahneman and Tversky 1974] challenged both assumptions [...]. We documented systematic errors in the thinking of normal people, and we traced these errors to the design of the machinery of cognition rather than to the corruption of thought by emotion.

The interesting thing about these errors of reasoning, then, is that they are produced by “the design of the machinery of cognition” *itself* and not by what we might normally associate with the irrational and emotions. If Robinson (1991), Venuti (2002), Hubscher-Davidson (2013) and others have variously argued that seemingly task-irrelevant factors (like wish-fulfilment, visceral reactions, personality type, feelings of falling in love, exhilaration, grief, anger, disappointment, and a myriad of other emotions) can affect the performance of translators, then Kahneman’s work on the machinery of cognition has taken this to a higher order of magnitude by bringing cognitive errors into the equation. And it is this order of magnitude that blurs the distinction between the two types of randomness discussed above, namely, between true randomness and randomness related to incomplete information (see Section 11.6.2 below).

The next section provides a number of examples of cognitive errors. But first another brief word on the machinery of cognition and its two distinct systems. According to Kahneman, system 1 has the upper hand most of the time. It continually produces and maintains a coherent view of the world around us. It often serves us well, but regularly it leads us astray. What leads us astray specifically are the many heuristics and biases it employs in order to maintain a coherent view of the world. These include a preference for information which is easily available (the so-called availability heuristic) and a preference for the plausible over the probable (a preference for stories over statistics). System 1’s creation of coherence gives us confidence in our beliefs, and the confidence it gives us serves to remove doubt, making us feel we ‘know’ and can ‘explain’ things; as Chesterman might put it, it helps to reduce our sense of puzzlement.

### 11.5 Six experiments

In this section I summarise six landmark experiments which suggest how “the design of the machinery of cognition,” dominated by system 1, might lead us to behave less rationally (or more heuristically) than we are aware. And because the basic machinery of cognition is something that translators and TS scholars share, the results of the experiments could be relevant to both. Experiment 1 looks at the perception of *physical* causation and experiment 2 at the perception of *intentional* causation. Experiment 3 questions how stable our intentions and attitudes actually

are. Experiments 4 and 5 investigate anchoring and priming; and experiment 6 brings intentions and priming together, suggesting that attitudes can be primed. The results of these experiments have implications for both teleological and quasi-causal explanation (Chesterman's two most important forms of causal explanation within TS: see Section 11.2 above), as well as for how we understand randomness within TS. These implications will be discussed in Section 11.6.

### 11.5.1 The illusion of physical causation

Our first experiment, thought up by Albert Michotte, dates back to 1945, and has earned a prominent place in the annals of experimental psychology. Designed to investigate the perception of causation, it managed to “[overturn] centuries of thinking about causality, going back at least to Hume’s examination of the association of ideas” (Kahneman 2011, p. 109).<sup>82</sup> Hume had claimed that we infer causality from being repeatedly exposed to constant conjunctions (Hume [1777] 2007). What he meant by that is that if you always see one event followed by another (like one billiard ball hitting another, which is then set in motion), you come to believe that the two events are causally linked. Michotte’s experiment suggested otherwise: we do not need repeated exposure to coincident events in order to infer causation; we are predisposed to see causation from the start, in the same way that we are predisposed to see colour. Michotte demonstrated this by animating a square drawn on paper and had it come into contact with another square, which then started to move. Even though Michotte’s subjects knew that there was no actual physical contact between the two squares they fell victim to the “illusion of causality” (Kahneman 2011, p.109). They described what they saw using the language of causality (e.g., they talked of square 1 “launching” square 2). Subsequent experiments have shown that babies too without any prior learning see sequences of cause and effect (Kahneman 2011, p.109).

### 11.5.2 Experiment 2: The illusion of intentional causation

Michotte’s experiment showed how we impose physical causality onto the world where there is none. But one year earlier, in another landmark experiment, Fritz Helder and Mary-Ann Simmel had demonstrated that we are even predisposed to impose *intentional* causality onto the world where there is none. This experiment takes the form of a one-and-half-minute film featuring two triangles and a circle.

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82 Some might quibble with Kahneman and point out that long before Michotte, the philosopher Emanuel Kant proposed that causation was an innate category of mind (Pinker 2007). But this does not alter the main point: the post-war period gave rise to an abundance of experimental evidence supporting the view that humans are predisposed to see causation.

Readers can view the animation on YouTube,<sup>83</sup> which Kahneman (2011, p.110) describes as follows:

Viewers see an aggressive large triangle bullying a smaller triangle, a terrified circle, the circle and the small triangle joining forces to defeat the bully: they also observe much interaction around [the] door [of a house] and then an explosive finale.

But of course the ‘agency’ takes place in the viewers’ minds. Infants too see agency where there is none (ibid.), suggesting that this propensity is innate. Kahneman argues that causal intuitions are an over-active part of our cognitive machinery (i.e., system 1) making us “prone to apply causal thinking inappropriately, to situations that require statistical reasoning” (p. 111).

### **11.5.3 Experiment 3: What are our intentions actually?**

Our third, more recent experiment, carried out by Petter Johansson and Lars Hall, was designed to investigate how people justify their intentions or choices in retrospect. I will summarise the experiment here; for the full report, see Johansson et al. (2005).

In this experiment participants were shown pairs of female faces (A and B) on two separate cards and asked to say which face they preferred. They were then handed the card they had chosen and asked to justify their choice. In a small number of trials, the participants were subjected to a clever trick. Using the techniques of close-up magic, the technician swapped the photo the participant had just chosen for the one he had rejected. So, for instance, if the participant had chosen face A, he was slipped face B (by means of a double-card ploy) and asked to justify his choice. One might predict that the participant would hesitate in this case and have trouble justifying his preference for the card in his hand (face B): after all, he had no preference for face B; he had chosen face A! But the results of the experiment showed otherwise. In at least 70% of the substitution trials, participants were fully able to justify their choices. Quite clearly they were inventing justifications on the spot. As Johansson, Hall and Chater (2012, p. 126) would later put it, even when there is a glaring mismatch between intention and outcome, participants are “prepared to offer introspectively derived reasons for why they chose the way they did.”

In a follow-up experiment Johansson et al. (2006) show, on the basis of a linguistic analysis of a one-million word corpus of introspective reports, that there is little difference between post-hoc rationalisation in manipulated contexts and post-hoc

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<sup>83</sup> The animation can be viewed at the following link: <http://www.youtube.com/watch?v=n9TWwG4S-FWQ>.

rationalisation in non-manipulated contexts. This follow-up experiment suggests that the participant's behaviour was not due to a fear of pointing out the error and thereby losing face. These findings are robust in that they have been replicated in a number of other domains, such as justifying preferences for jam flavours (Hall et al. 2010), taking sides in moral dilemmas (Hall et al. 2012) and justifying voting intentions (Hall et al. 2013).

#### **11.5.4 Experiment 4: Anchoring and the wheel of fortune**

Colman (2009, p. 37) defines anchoring as “a judgemental heuristic through which a person makes an estimate by starting from an initial value and then adjusting it [...]” One of the first experiments on anchoring was carried out by Kahneman and Tversky (1974), and it involved the use of a wheel of fortune which had been rigged to stop only at the numbers 10 and 65. In this experiment the researchers spun the wheel of fortune once in front of different groups of participants and asked them to write down the number it had stopped at (which was obviously either 10 or 65). Next they asked the participants two questions: “Is the percentage of African nations among UN members larger or smaller than the number you just wrote?”; and “What is your best guess of the percentage of African nations in the UN?” The mean estimates participants gave were 25% for those who had written down 10, and 45% for those who had written down 65. Reflecting back on the experiment, Kahneman (2011, p. 166) writes:

The spin of a wheel of fortune – even one that is not rigged – cannot possibly yield useful information about anything, and the participants in our experiment should have ignored it. But they did not ignore it.

The above experiment was carried out on students but random-anchor experiments have been replicated in highly professional spheres. Englich, Mussweiler and Strack (2006) observed significant effects of random anchors on the length of sentences judges and prosecutors were prepared to mete out to offenders, suggesting that their system 1 and not their system 2 was at work.

When Tversky and Kahneman conducted their experiment on anchoring, little was known about the mechanisms involved. Were the numbers on the wheel of fortune simply acting as a point of departure from which participants could deliberately adjust up and down? Or was there also some kind of associative trigger at work, that is, was the anchor also functioning as a prime? The following experiment, conducted more than 25 years later, provided strong evidence that anchors can indeed function as primes.

### 11.5.5 Experiment 5: Priming and a word recognition task

This experiment was carried out by the German psychologists Thomas Mussweiler and Fritz Strack. For the full report, see Mussweiler and Strack (2000); again, only the gist can be given here. Two groups of participants were given anchoring questions about temperature. Group 1 was asked: “Is the annual mean temperature in Germany higher or lower than 20°C?”; and group 2 was asked: “Is the annual mean temperature in Germany higher or lower than 5°C?” After that all the participants were asked: “What is the annual mean temperature in Germany?” As expected there was a priming effect. Participants who had been given the higher anchor came up with higher estimates; participants who had been given the lower anchor came up with a lower estimate.

But the experiment did not end there. The temperature estimation task was immediately followed by a word-recognition task. Here all participants were presented with strings of letters and had to decide for each string whether it was a word or a non-word. The strings of letters presented were of four types: (1) summer-related words like *heiss* (hot), *Sommer* (summer) and *Strand* (beach); (2) winter-related words like *Ofen* (stove), *kalt* (cold) and *Schnee* (snow); (3) season-neutral words like *essen* (eat), *Schuh* (shoe) and *Teufel* (devil); and (4) non-words like *mulp*, *krump* and *tulten*. The response times were revealing: participants who had been given the low anchor in the temperature task had shorter response times to the winter words and longer response time to the summer words; participants who had been given the high anchor in the temperature task had shorter response times to the summer words and longer response times to the winter words. The significance of these results is that, for the first time, it provided evidence that anchors can act as associative triggers (i.e., primes) and not just numbers from which you adjust up or down (ibid.).

### 11.5.6 Experiment 6: Priming and our attitudes

This last experiment mentioned here – Strack, Martin and Stepper (1988) – investigates how priming affects our attitudes. In particular it looks at the associative phenomenon of “reciprocal priming” (Kahneman 2011, 77). Reciprocal priming works as follows: if feeling happy and responsive makes us smile, then smiling will ‘prime’ us to feel happy and responsive; or if being vigilant and suspicious makes us frown, then frowning will ‘prime’ us to feel vigilant and suspicious. Reciprocal priming had already been noted by Charles Darwin (1872, p. 366), although he did not use that term. However, it was not until Strack, Martin and Stepper (1988) conducted their experiment that it was observed under robust laboratory conditions. Again, only the gist is given here: participants were asked to rate the funniness of some Gary Larson

cartoons, and to do so with a pencil in their mouth. The first group of participants was told to hold their pencils between their teeth (thus inadvertently forcing their lips into a smile); the second group was told to hold their pencils between protruding lips, the points aimed straight ahead (thus inadvertently forcing their lips into a pout and their brows into a frown). The first group rated the cartoons funnier than the second, and this was statistically significant. None of the participants reported awareness of smiling or frowning. Kahneman (*ibid.*) argues that this experiment was crucial in showing how “simple common gestures can [...] unconsciously influence our thoughts and feelings” by means of associative triggers or primes.

## 11.6 Discussion

### 11.6.1 The illusion of causation and TS scholarship

The experiments discussed above have implications not only for the way we explain translations but also for the way we understand our own desire to explain. Chesterman (2008, p. 364) touches upon the latter when he stresses the pragmatic nature of explanation:

An explanation is [...] initially an explanation for someone, i.e., its adequacy and acceptance as an explanation depends partly on the questioner’s cognitive context, their experience of a gap or puzzle that needs explaining.

Experiments 1 and 2 above reveal something of that “cognitive context.” Experiment 1 suggested that we are cognitively predisposed to see physical causes, and experiment 2 that we are cognitively predisposed to see intentional causes. These in turn suggest that we might not feel that we have properly understood our data unless we can identify a cause. If the Helder and Simmel experiment makes us see “a large triangle bullying a smaller triangle,” then our corpus data might make us “see” a majority language bullying a minority one, or a large institution bullying a solitary translator; or, conversely, a translator breaking free from norms and cultural constraints. This urge to unify our data into a narrative with agents and patients can be seen in Bruno (2012, p. 254):

If each of our individual case studies tells a different story, how can we be synthetic and avoid being swamped by singular examples and contradictions? Attempts at answering such questions have produced excellent studies that have deconstructed and reconstructed the private and the public spheres, and provided historical accounts that, to my mind, succeed in connecting individuals to larger patterns of discourse.

Salmon 1998 (as reported in Chesterman 2008) argues that unification is a way of explaining, but is all this “deconstructing and reconstructing” really necessary? According to Kahneman (2011), if there is a necessity, it is not logical but biological: evolution has predisposed us to join the dots. The problem is, though, that there are a great, great, great many dots. This takes us back to the subject of randomness.

### 11.6.2 Randomness and translation

Section 11.2 summarised Chesterman’s concerns about randomness as expressed in his 2008 article. Here is a transcript of the lecture version (Chesterman 2011) of that caveat:

One of the frustrating ideas to have come out of quantum physics in the last 100 years or so is the fact that at bottom a great deal of what we thought was understandable turns out just to be chance. There is this random element in the way in which particles move around in mysterious ways. It has been claimed by one physicist that maybe chance is actually a more fundamental concept than causality itself. [...] chance is everywhere and you cannot escape [it]. Even physicists cannot escape chance, so why should we humanists think we can escape it? That’s one warning to bear in mind. What space do you leave for chance?

This is a big caveat – far too big to ignore. Yet it is hard to know how to make sense of it, given that there is no obvious connection between the behaviour of infinitesimally small subatomic particles and the act of translation. The upshot of this might be that we ignore Chesterman’s warning simply because we cannot connect with quantum physics. However, as we have seen earlier, Taleb (2010) argues that we do not need to connect with quantum physics to see how randomness is relevant to the social sciences and the humanities. This is because randomness in quantum physics and in our daily lives are of two completely different kinds. Randomness in quantum physics is Gaussian; in other words, given large enough numbers, the fluctuations even out (Taleb 2010, 420). This means that even though the individual subatomic particles in, say, a chair will behave randomly, the chair as a whole will not behave randomly; that is, it will not suddenly jump off the floor by itself. However, in history, in the social sciences and any discipline where we have to explain human behaviour, randomness amounts to *incomplete information*<sup>84</sup> and it

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84 On the question of whether incomplete information is also intrinsically random, Taleb (2010, 360) remains agnostic: “Even if history were a nonrandom series generated by some ‘equation of the world’, as long as reverse engineering such an equation does not seem within human possibility, it should be *deemed* random” (emphasis mine).

is potentially far more unsettling: given that “real history” is made up of “billions of simultaneous events,” information is always incomplete (p. 360). The following sketch (which I have adapted from Taleb 2010, p. 419) brings this to life:

[Imagine a translator working at her computer, a mug of coffee on her desk]. Physical reality makes it possible for [her mug] to jump – very unlikely, but possible. Particles jump around [randomly] all the time. How come [the mug], itself composed of jumping particles, does not? The reason is, simply, that for [the mug] to jump would require that all of the particles jump in the same direction, and do so in lockstep several times in a row (with a compensating move of the table in the opposite direction). All several trillion particles in [her mug of coffee] are not going to jump in the same direction; this is not going to happen in the lifetime of this universe. So [the translator] can safely put [the mug] on the edge of [her desk] and [the TS scholar] can worry about more serious sources of uncertainty. (Taleb’s emphasis)

More serious sources of uncertainty could come from the types of processes unveiled in experiments 4, 5 and 6 above. In the case of our translator, random events might include words which happen to be printed on her coffee mug or pop-ups on her computer screen. Experiment 5 revealed how arbitrary temperature anchors influence performance in word-recognition tasks. It is possible therefore that, for any given sentence, arbitrary words in the translator’s environment (like pop-ups, or headlines on newspapers which happen to be lying around) will prime the translator’s lexis or phrasing. But such priming effects would be impossible to detect in retrospect.

Another source of randomness might be the way a pencil is positioned in the translator’s mouth: horizontally, making her smile and suddenly open to a daring collocation; or vertically, forcing her brow into a frown, making her feel critical and more risk-averse. Experiment 6 on reciprocal priming suggested that “simple common gestures can [...] unconsciously influence our thoughts” and decision processes (Kahneman 2011). Again, such priming effects would be impossible to detect after the event.

And yet it is not uncommon for TS scholars to interview translators after the event and ask them to justify their choices (e.g., Vanderauwera 1985; Brownlie 2003). And translators are often quite happy to oblige. Yet the face-preference experiment and its offshoots (experiment 3) suggest that humans have a propensity to fabricate reasons on the fly. This means that we cannot always rely on translators’ introspective justifications.<sup>85</sup> Moreover, in the face-preference experiment and its

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85 House (2013) and Saldanha and O’Brien (2013) make a similar point. Saldanha and O’Brien warn

offshoots, there was virtually no time-lapse between the choices subjects made and the call for justification. Yet often when translators are asked to justify word choices (or more general aspects of style) in their published translations, they are asked to do so after a relatively long period of time. This time-lapse would probably make the “introspectively derived reasons” even less reliable.<sup>86</sup>

I do not wish to suggest that translators are always irrational.<sup>87</sup> System 2 (the slow decision-making part of cognition) operates in tandem with system 1 (the part of cognition which is susceptible to primes and other heuristics), but the problem is that there is no way to disentangle the two after the event. In contrast to Chesterman’s claim about farmer Jones sinking through the ice (see Section 11.2), it is well-nigh impossible to explain translators’ behaviour ‘after the fact’ if we take all the relevant causes into account: these include the sorts of primes just discussed, but hundreds (if not thousands) of other factors as well which have not been the focus of this article. Taleb (2010, 358) likens such attempts at reverse engineering to “unfrying an egg.” To illustrate the difficulty of reasoning backwards, he cites the following thought experiment, also featuring ice:

Operation 1 (*the melting ice*): Imagine a lump of ice and consider how it may melt over the next two hours while you play a few rounds of poker<sup>88</sup> with your friends. Try to envision the shape of the resulting puddle.

Operation 2 (*where did the water come from?*): Consider a puddle of water on the floor. Now try to reconstruct in your mind’s eye the shape the ice may once have been. Note that the puddle may not have necessarily originated from ice. (adapted from Taleb 2010, 357)

Taleb argues that operation 1, the forward process, is possible, given the right models and enough time for calculations. But operation 2, the backward process, is far more complex: “from the pool of water you can build infinite possible [lumps of] ice [...],

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of the measurement errors in questionnaires where “the actual response (i.e. the answers given) differs from the ‘true’ response (i.e. the facts or beliefs of the participants)” (153), due, for instance, to the Hawthorne effect.

86 See Kahneman (2011, 381–384) on the difference between the ‘experiencing self’ and the ‘remembering self’

87 As a translator myself, I would find such a suggestion outrageous. Kahneman would say, however, that this sense of outrage is part of my cognitive illusion that system 2 is always in charge.

88 Before he became an epistemologist, Taleb worked as an options trader. This might clarify the reference to poker. TS scholars might prefer to spend the intervening two hours watching a film with their friends.

if there was in fact [...] ice [...] there at all” (p. 358). This upsets the intuition that explanation after the fact is easier than prediction.

### 11.6.3 Random primes and TS scholarship

In Section 11.5.2 I showed how random primes could influence the work that translators do. But it is equally possible that random primes influence the work that we scholars do. This is because if translators are susceptible to priming, then so are we all.<sup>89</sup> Random anchors have, after all, been shown to influence the judgements of highly accomplished professionals (see experiment 4). So one area where random primes could affect TS scholarship is in the way we think about causation itself. In Section 11.2, we saw how Aristotle is taken to be the classical starting point for theories about causation in the humanities. If this is the case, then his *four* types of cause could be acting as an anchor. Of course our system 2 is capable of “adjusting up” (see experiments 4 and 5) from the number four. This is precisely what Pym (1998, p. 158) does when he says, “For every translation that we might want to explain in terms of causation there are *at least* four possible causes at work” (emphasis mine). And of course our system 2 is capable of subdividing four causes into multiple sub-causes. This is precisely what Brownlie (2003, pp. 116–128) does when she devises a complex grid to examine the interaction between her four causes and various sub-causes.

However, experiment 5 above strongly suggests that anchors also function as associative primes, to which our system 1 responds with an eager nod. In other words, once we have associated the word ‘cause’ with the word ‘four,’ we might be primed to feel that the number of causes relevant to our object of study is somewhere in the region of four. One might protest that there is no comparison between Aristotle’s four causes and the wheel of fortune. After all, the number four is not arbitrary: surely Aristotle had thought the problem of causation through. This might be the case but it does not rule out a huge element of chance as the following thought experiment illustrates:

#### *Aristotle and the wheel of fortune*

Let us imagine going back in time and having the works of Aristotle destroyed in the fire of the Great Library of Alexandria. And let us imagine resurrecting in their stead the complete lost works of another ancient philosopher, thereby bestowing upon them not only fame but also the fortune of having survived the ravages of time. Now let us imagine that this philosopher had written on causation too, but instead of giving us four types of causes, had left us four

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89 Saldanha and O’Brien (2013) make a similar point in their discussion of “internal validity.”

hundred. In other words, we are going back in time in order to rig the wheel of fortune to stop at 400 instead of 4.

Now let's ask ourselves whether the taxonomy of causes described in Section 11.2 of this article would have clustered so neatly around the number 4? This is not a rhetorical question: the answer we will never know.

### 11.7 Concluding remarks

This article has made a case for giving randomness pride of place in our retrospective accounts of corpus data. In doing so it has taken heed of Chesterman's warning that "chance is everywhere." Following Taleb (2010), it has drawn on the definition of 'randomness'<sup>90</sup> that makes sense within the humanities: namely, *incomplete information*. There are innumerable sources of incomplete information which might be relevant to our understanding of a corpus of literary translations: details of translators' personal histories and subconscious (Venuti 2002), their somatic responses (Robinson 1991), their personality types (Hubscher-Davidson 2009), the cognitive errors to which we all are prone (Kahneman 2011) – not to mention the full run-down on translators' skills and personal preferences; everything that the translators have read; all the films and sitcoms they have seen; the books their mothers read to them when they were little; their fluctuating blood sugar levels and sleep patterns; the physical set-up and working environment; their relationship with the authors they translate; the dreams they have about their publishers; whether or not they were daydreaming about their lover as they translated a particular page; and so forth and so on.

Of all these sources of uncertainty, I have concentrated on one type, namely the "systematic errors in the thinking of normal people [due] to the design of the machinery of cognition rather than to the corruption of thought by emotion" (Kahneman 2011, 15). And of the many systematic errors of this kind, I have focussed only on the susceptibility to priming and the illusion of causality. The experiments cited in Section 11.5 suggest how random primes could influence translators even as they are seated at their desks. I have also suggested that there might be randomness in the very way we scholars think about causation given that we too are susceptible to priming. So if it is partly a matter of luck that Aristotle has survived as the classical starting point for our understanding of causality in the humanities, then his four types of causes could be acting a (very low) random anchor for estimating how many causes there actually are.

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90 Again, the terms 'chance' and 'randomness' are being used interchangeably here.

All this is not, however, a plea against explanation. If Kahneman is right, our biological drive to explain is too powerful to quash anyway. But it is a plea against the type of explaining that casts randomness aside, the type of explaining that pays only lip service to incomplete information. To rephrase Chesterman: incomplete information is everywhere and you cannot escape it.

So what is the status of ‘explanation’ in TS? Here again I defer to Chesterman, who is sparing in his use of the word. Instead he seems to prefer the term ‘explanatory hypothesis’ as a way of indicating that explanations are no more than hypotheses that can be proved false. This is fitting for hypotheses which can be tested under experimental conditions. Our interdisciplinary colleagues referred to in the introduction provide examples of that (e.g., Halverson 2003; Hubscher-Davidson 2009). More recently, Saldanha and O’Brien (2013) have explored various experimental research designs taken from disciplines like psychology, sociology and experimental linguistics, showing how they can be applied to TS. They enumerate different types of confounding factors (both internal and external) and suggest how they can be reduced (though not eliminated) under controlled and semi-controlled conditions, thereby helping us establish causal links in a statistically significant way. However, they do not include methods which allow us to reduce confounding factors *in retrospect*.

Often when we want to explain corpus data by relating them to the ‘wider context’ (involving events which have happened in the not-so-recent or recent past), it is not the principle of falsification that guides us but the so-called confirmation bias, that is, the tendency to interpret data in a way that conforms to our pre-existing beliefs (Wason 1968; Taleb 2010; Kahneman 2011) – a sort of priming that makes us prone to recall readily available information (the availability heuristic). One source of readily available information within TS would be certain cultural theories which have repeatedly served as explanations before. It might be prudent, therefore, when we try to explain translations in retrospect to exercise more caution than is often the case. As Toury (1998, 10) says, “Translating as an act and as an event is [...] historically, socially and culturally determined.” But there are other determinants too; and taken together these determinants are so multitudinous that explanations of translations in retrospect can be no more than terribly tentative hypotheses.