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"His story is truly vivid...": The role of narratives of vicarious experience in commodification and marketisation of genetic testing in Chinese social media



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ABSTRACT

This paper uses a narrative inquiry approach to investigate how genetic testing companies in Mainland China strategically construct narratives of vicarious experience (NoVE) about their clients to market genetic tests on social media. Ten stories about clients undergoing genetic testing are examined to identify the forms that NoVE take and the functions that they perform in relation to the companies' promotional agendas. Two types of NoVE are identified: 'compound narratives' that combine elements of narratives of personal experience (NoPE) and NoVE, and 'NoVE proper' that are narratives told in the third person throughout. The NoVE demonstrate long Complication and explicit Evaluation, which together with specific discourse devices foreground their authenticity and enhance their tellability. Authenticity of the narratives is primarily foregrounded through heteroglossic interplay of the 'voice of medicine' and the 'voice of the lifeworld' and tellability is enhanced through extreme case formulations. These discourse and rhetorical strategies are powerful tools to facilitate the companies' marketing agendas by better enabling the target audience to relate to the stories. At the same time the strategies conceal the explicit involvement of the companies in the production of the narratives, raising ethical questions about the commodification of genetic tests in the emerging consumer market.

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1. Introduction

This paper uses a narrative inquiry approach (De Fina and Georgakopoulou, 2011; Labov and Waletzky, 1967) to investigate how genetic testing companies in Mainland China use narratives of vicarious experience (hereafter, NoVE) strategically to market their genetic tests on social media. NoVE refer to stories that are reconstructed from various sources and are rendered in the third person (Norrick, 2013). Compared to narratives of personal experience (hereafter, NoPE), NoVE have received little research attention. Previous studies of NoVE have highlighted their distinctive participation framework (Goffman, 1981), where unlike NoPE, the roles of the 'teller' (first person) and the 'protagonist' (third person) are separated (Norrick, 2013: 386), and the specific structural and interactional consequences of this separation of participants' roles. Of particular relevance to this paper is the issue of epistemic grounds for telling the story: in the first person narration, the speaker 'owns' the story and, therefore, has every right to tell it; in the third person, however, the speaker needs to establish the epistemic

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authority and the rights to tell the story through, for example, having witnessed the narrated events, or having been somehow affected by them (Sacks, 1984; Norrick, 2013). In telling NoVE, the tellers must also highlight their 'tellability' (Ochs and Capps, 2001), namely, "the interest afforded by the described experience" (Fludernik, 1996: 54) which needs to be especially striking or newsworthy. Our interest in this paper is on the specific discourse and rhetorical strategies that genetic companies employ to establish the telling rights and enhance the tellability of NoVE about their past clients to pursue their marketing agenda of selling genetic testing.

In the past, genetic testing has been used for screening and diagnosis of genetic disorders in clinical contexts (e.g. Huntington's disease, Down's syndrome). Advancements in genetic science have broadened the application of genetic testing beyond single gene disorders to common conditions (e.g. obesity, diabetes, cancer) and non-clinical contexts (e.g. ancestry tests, tests for physical traits such as inborn talents, athletic ability) (Critchley et al., 2015; Liu and Pearson, 2008). Genetic tests have become more accessible and affordable to the general public. They are available for purchase from medical and non-medical commercial companies, and one can even buy them on-line. This trend can be described as 'commodification' of genetic tests, meaning that they have been changing from a medically-indicated necessity into a 'sellable' commodity item (Fairclough, 1993; Featherstone, 2007; Zayts and Luo, 2017). The use of patient/illness narratives for commodification purposes has been examined in previous research. Mazanderani et al. (2013: 891) note "the rise of [...] markets in which illness narratives are produced, circulated, used and exchanged, generating value in different ways for different people". Lupton (2014) writes about 'the digital patient experience economy', that is, lay people's experiences of illness and healthcare expressed in digital media platforms have been commodified (e.g. the use of illness narratives in advertising, and the selling of patients' experiences and their opinions on health care to interested commercial parties).

In the context of biomedical advertising, while there is extensive research on genetic companies' marketing practices (e.g. Arribas-Ayllon et al., 2011; Zayts and Luo, 2017), research that examines the use of consumer narratives as a specific advertising strategy is scarce. A notable exception is Harris et al.'s (2014) study that provides a narrative analysis of YouTube videos posted by individuals who have purchased genetic testing for disease susceptibility. As the authors maintain, these narratives constitute a form of free advertising tied to consumerism and larger bioeconomic concerns. However, the narratives examined in their study represent NoPE told by consumers, rather than NoVE employed strategically by commercial genetic companies. With NoVE as the third-party stories, the issue of authenticity becomes particularly pertinent. As Mazanderani et al. (2013: 896) note "in order for value to be generated from illness narratives, they had to be based on the actual experiences of *real* [our emphasis] people". To maximize the promotional value of NoVE about their past clients, genetic companies thus need to adopt discourse and rhetorical devices to maximize the authenticity of these NoVE. In this paper, drawing on existing work on the function of 'real' and 'authentic' narratives in advertising (Stern, 1994), we explore the 'sources of authenticity' (Tolson, 2001, 2010) that enhance the promotional value of NoVE in social media health communication.

Social media, as a type of computer mediated communication (Herring et al., 2013; hereafter, CMC), and as the specific site of investigation of NoVE, deserves particular attention for a number of reasons. First, social media advertising in Mainland China is a largely under-researched context. Second, while narratives are of focal concern outside of CMC research, they are largely under-represented within it (cf. Georgakopoulou, 2013), especially from a discourse-oriented perspective (De Fina, 2016). The few existing studies have focused, for example, on advice narratives in online support groups (Harrison and Barlow, 2009), narratives on Facebook and Twitter, and patients' illness narratives in personal blogs (Page, 2012). Research has considered the extent to which narrative patterns found in offline contexts of storytelling also occur in CMC contexts, but may be reshaped by the technological affordances of the specific contexts under investigation (cf. Page, 2015). Previous studies suggest that while narratives that occur in synchronous forms of CMC (e.g. Skype conversations) primarily display features of spoken narratives, narratives found in asynchronous, written forms of CMC (e.g. social media posts) may display features of both conversational and written narratives, creatively adapting and re-casting elements of genres from old media and face-to-face communication (Georgakopoulou, 2013). This paper addresses how the specific mode of communication impacts on the discourse and rhetorical features of the analysed NoVE.

In what follows, we first describe our data and the methodological approach. We then examine the forms that NoVE take in our data and discuss how the 'tellers' (i.e. genetic company employees) establish the epistemic authority to tell the clients' stories. We describe specific discourse and rhetorical strategies that are observed in NoVE and the functions they perform with regards to promotional agendas. As we demonstrate, these strategies serve to foreground the authenticity and enhance the tellability of the analysed NoVE and enable the target audience to relate to these stories. NoVE thus become one of the tools, or "a vehicle for selling goods" (Fairclough, 1993: 141) for the genetic companies' economic benefit.

2. Data and method

The data that we draw on in this paper come from the social media accounts of one direct-to-consumer (hereafter DTC) genetic test company and one biomedical company on 微信 (WeChat), one of the most popular social media in Mainland China. Although the healthcare system in Mainland China is largely public, private businesses play an important role in the provision of genetic services and clients need to pay out-of-pocket (Zhao et al., 2013). The DTC company included in the study sells a test that claims to predict individuals' risks for developing various health conditions (e.g. cancers, diabetes, cardio-vascular diseases) and provide information about different human traits (e.g. memory ability, athletic ability, reaction to alcohol, etc.). The biomedical company specialises in the development and sales of biomedical products and uses the social

media to publicize news and developments in biomedicine. The two companies invited their followers to share their own or others' genetic stories by email, which were then posted on the social media.

In collecting the data, we sampled by time (Herring, 2004), archiving all posts (N=1045) published on the two organizational accounts from April to August 2016, when the companies actively elicited stories about genetic testing from their followers. Eleven of the collected posts contain narratives about genetic testing, two of which were excluded as they did not feature NoVE. The final corpus consists of nine posts that include a total of ten narratives. The posts are freely available in the public domain, with no restrictions on access. Nevertheless, in line with established practices for using open-access online data (e.g. Gough, 2016; Hanna and Gough, 2016; Wiggins et al., 2016.), the ethical principle of anonymity was implemented to protect the privacy of relevant individuals and organisations involved in this study. This paper is part of a larger project on DTC genetic testing that has been approved by the relevant Ethics Committee of the authors' institution.

In examining NoVE, we draw on discourse-analytic and sociolinguistic approaches to narrative inquiry (De Fina and Georgakopoulou, 2011; Labov and Waletzky, 1967). Labov's six-part structure (Labov and Waletzky, 1967: 32; Labov, 1972: 363) provides a framework for analysing the forms of NoVE, consisting of (1) Abstract that initiates the narrative and summarizes the narrative to be told; (2) Orientation that gives the details of the story setting (time, place, characters); (3) Complication that outlines the main events; (4) Evaluation that tells why the story is being told and reveals the narrator's evaluation of the story; (5) Resolution that presents story ending or outcome; (6) Coda that is an optional part of a narrative that connects the audience to the present time once again. In presenting the examples of NoVE, we adopt Labov's (2013) approach, designed to foreground the temporal juncture in narrative. In particular, in presenting the data each independent clause is given a successive line number. Any subordinate clauses are placed on the same line as the independent clause they are dependent on. Subordinate finite clauses are indented on a separate unnumbered line. Non-finite clauses are kept on the same line. The complements of verbs of quotation and propositional predicates are also kept on the same line.

Within this framework we particularly focus on the following discourse devices: pronominal use (Brown and Gilman, 1960), heteroglossia (Bakhtin, 1981), contrast (Smith, 1978) and extreme case formulations (Edwards, 2000; Pomerantz, 1986).

3. Analysis

3.1. Overarching structure: two types of narratives

We begin our analysis by briefly characterising the overarching structure of the NoVE in our data, from which two types of NoVE were identified: (1) *compound narratives* that combine elements of NoVE and NoPE; and (2) *NoVE proper* that are narratives told in the third person throughout. Example 1 illustrates a typical compound narrative in which NoVE and NoPE are combined to present clients' stories on the social media.

3.1.1. Compound narratives

Example 1

```
在我们接触到的基因检测用户中,
    小王是相当特别的一位。
   说他特别
    并不是因为颜值高、很能聊,
   而是因为他的故事实在生动。
   在他完成基因检测一个月后
    一个好消息和一个坏消息纷至沓来。
   以下,是他的讲述。
    f 1
   去年九月因为朋友的推荐,
    "豪掷"999元在((公司))进行了检测。
1. Among the users of genetic testing we came into contact with,
  Xiaowang is a rather special one.
2. We say he is special,
  not because he is very handsome and talkative.
  but because his story is truly vivid.
3. One month after he undertook genetic testing.
  The good news and the bad news arrived one after the other.
4. Below, is his account.
5. Last September because of a friend's recommendation,
  I "generously" spent 999 RMB on doing genetic test with ((company)).
   ((Xiaowang's story about his experience of DTC narrated in the first person follows))
```

In Example 1 the narration that gives a brief introduction about the client is initiated by a representative of a DTC company. The teller uses the plural pronoun 'we' in speaking on behalf of the company. This personal deictic signals a position of the teller in relation to others (Bamberg et al., 2011; Trask, 1999). There is an integration of 'self' into a collective identity, that is, the teller is positioned as belonging to the DTC company. The pronoun 'we' inherently distinguishes the teller and the DTC company from the protagonist (i.e. client) sharing his own story, authenticating what follows. The introduction exhibits, albeit in a very brief form, the Labovian structural elements of a narrative, the Abstract of the story (lines 1–2), the Orientation that is coupled with the beginning of the Complication (line 3). The main protagonist is referred to in the third person, creating an impression that the story is going to be narrated in a vicarious mode. The narration, however, switches to the first person (from line 5 onwards). There are thus two tellers in this compound narrative: the company representative and the company's client. The company representative is a "co-teller" (De Fina, 2016: 483) who introduces the experience of a client through vicarious mode of narration, and the client becomes the principal "teller" and the "protagonist" (Norrick, 2013: 388) narrating his own story. The interplay between the voice of the genetic company and the voice of the client will be revisited later in the paper.

3.1.2. NoVE proper

We now turn our attention to what we call the NoVE 'proper' that are the primary focus of our paper. By 'NoVE proper' we refer to "retelling of *other* people's stories" (Norrick, 2013: 386) in the third person. The tellers are employees of genetic companies, though their presence in the actual stories is either non-existent or incidental, only becoming evident in the Evaluation phase (as indicated by the switch to the first-person narration mode).

In the sections that follow, we present the analysis of four 'NoVE proper' taken from three social media posts which are representative of our corpus. These examples represent different types of genetic testing, and as such they provide evidence that NoVE is a typical strategy that these genetic companies employ to market their tests across different genetic contexts. The first two stories are set in the traditional clinical genetic context of testing for Down's syndrome (Appendix A). The third story is in the less established context of genetic susceptibility testing for bowel cancer risk (Appendix B). The last story is set in an evolving context of genetic testing for non-clinical purposes (Appendix C). We compare the stories about testing that is medically-indicated (Down's syndrome and bowel cancer risk) with one story where the testing is electively sought by consumers for non-medical reasons (e.g. physical traits, abilities, and health risks). This presentation displays the structural and functional differences, as well as a range of discourse and rhetorical devices in NoVE describing medically- versus non-medically indicated tests, and how these NoVE serve to promote the companies' marketing agendas.

3.2. NoVE in medically-indicated contexts of genetic testing

Before examining in detail the discourse and rhetorical strategies within the NoVE, we briefly consider three narratives in terms of the Labovian narrative structure, which they each display. The first two narratives are about prenatal genetic testing for Down's syndrome. The Orientation of the first narrative introduces Juan (pseudonym) as a 41-year old mother of one son by a previous partner, who conceived a twin pregnancy through test tube technology with her current husband, who suffered from 'weak sperm'. The Complication describes Juan receiving a high-risk result for Down's Syndrome through non-invasive prenatal genetic testing. Juan was offered an invasive diagnostic test, amniocentesis, that has a nearly 100% detection rate in singleton pregnancies but carries a slight risk of miscarriage. The amniocentesis confirmed that one of the twins did not have Down's syndrome. It failed to show the results for the second foetus, but Juan refused the offer of a further amniocentesis. After the birth, the second child was diagnosed with Down's syndrome. The Resolution of the story depicts Juan deeply regretting not opting for the repeated amniocentesis but eventually accepting her current situation. A short Evaluation highlights the main thrust of the narration: Juan's 'misconception' about Down's syndrome screening resulted in an 'unexpected pain' to her after her children were born. This story is immediately followed by a contrastive story from the same genetic company employee, about a woman Li (pseudonym) who had taken both a screening and a diagnostic test for Down's syndrome and terminated the pregnancy due to the confirmed Down's syndrome diagnosis. Both the second story about Down's syndrome, and the third story about a protagonist Director Zhao (pseudonym) undergoing genetic testing to assess susceptibility to bowel cancer, display elements of the Labovian narrative structure like the first story.

In all three narratives, the tellers establish their epistemic authority to tell the stories of others by drawing on their professional authority as employees of genetic testing companies. The protagonists came to consult the company employees about their genetic issues and told them their stories. This entitlement to tell also becomes visible in the Evaluation and the Coda parts of the stories in which the voices of the company employees become explicit as they give the evaluation of the protagonists' experiences, highlighting some common misconceptions about genetic testing and asserting their motivations for telling the stories. The Complication is the longest phase of the NoVE that we examine here, with a level of detail that makes these stories more authentic and tellable. All three NoVE employ some common discourse and rhetorical strategies that serve to enhance the authenticity and tellability of the NoVE, thereby making them more appealing to the target audience.

¹ Due to the length of the full NoVE, we have reproduced them as Supplementary Data that will be available online.

3.2.1. Creating authenticity: heteroglossic interplay of the 'voice of medicine' and the 'voice of the lifeworld'

One of the recurrent strategies that the companies draw on to foreground the authenticity of the NoVE is heteroglossia (Bakhtin, 1981), or the interplay of multiple 'voices', namely, the 'voice of medicine' and the 'voice of the lifeworld' (Mishler, 1984). At the lexical level, this is manifest, first, in the use of medical jargon alongside lay language. Medical jargon serves to provide a sense of credibility of the stories and to validate the provided medical information; the use of lay language makes complex medical descriptions more understandable to the general public who are the target audience:

Example 2

- 1. 检测结果发现赵主仟大肠癌(结直肠癌)遗传风险明显高于中国人群平均水平(下图右)。
- 2. 风险评估等级提示赵主任罹患大肠癌的可能性是普通人的3.65倍!
- 1. The results showed that Director Zhao's genetic risk for bowel cancer (colorectal cancer) is significantly higher than the average level of the Chinese population (bottom right picture).
- 2. The risk assessment suggested that Director Zhao's chance of developing bowel cancer is 3.65 times higher than an average person!

Example 2 provides information about the protagonist, Director Zhao's risk assessment for bowel cancer. The risk is formulated in two different ways: first, as a descriptive evaluation ('明显高于中国人群平均水平', 'significantly higher than the average level of the Chinese population'), and then statistically, as a relative risk ('3.65倍', '3.65 times higher'). Providing a numerical probability for risk assessment is a common strategy among medical professionals. There is, however, abundant research that has demonstrated that the lay public tend to misunderstand probabilities explained in numerical terms (e.g. Kahneman et al., 1982; Yau and Zayts, 2014). Non-quantitative expressions of risk (such as the descriptive evaluation in the analysed example), on the other hand, are more aligned with the language of everyday life (Kreuter, 1999). The textual description is supported by a medical artefact, a test report displayed next to the narrative:

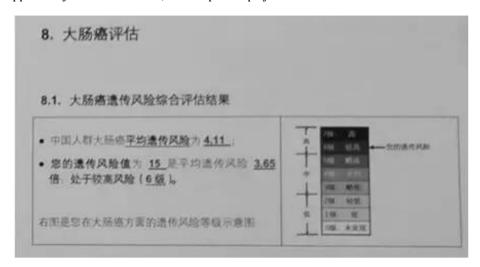


Illustration 1. Director Zhao's test report assessing his risk for bowel cancer.

8. Bowel Cancer Risk Assessment

8.1 Overall genetic risk for bowel cancer

The <u>average genetic risk</u> for			
bowel cancer among the	11:-1-	Level 7 High	
Chinese population is 4.11 ;	High	Level 6 Much higher	←Your genetic risk
• Your genetic risk value is 15,		Level 5 (Illegible)	
which is <u>3.65</u> times higher than	Mid	Level 4 (Illegible)	
the average: you are at a much		Level 3 (Illegible)	
higher risk (<u>level 6</u>).		Level 2 Much lower	
	Low	Level 1 Low	
The picture on the right is the		Level 0 Not found	
illustration of your genetic risk for			1
bowel cancer			

Illustration 2. Translation of Director Zhao's test report assessing his risk for bowel cancer (from Chinese into English).

In this test report, as supporting evidence to the textual description, both lay, descriptive ('中国人群…平均遗传风险', 'average genetic risk … among the Chinese population'; '较高', 'much higher') and medical/numerical ('遗传风险为4.11', 'genetic risk … is 4.11'; '您的…值为15', 'your … value is 15'; '3.65倍', '3.65 times higher'; '6级', 'level 6') presentations of risk are given. Presented together, the textual description and the multimodal representation (Kress, 2010) in the form of an authentic test report provide even stronger credibility to the story about genetic testing.

Furthermore, the heteroglossic interweaving of the medical and the life worlds is manifest in the use of reporting indirect speech and constructed dialogue (Tannen, 1986) of various participants who were involved in genetic testing. These formats introduce the perspectives of different participants (i.e. clients and professionals) in the unfolding story, potentially enhancing the authenticity of the NoVE. Example 3 about Down's syndrome illustrates these features in the NoVE:

Example 3

- 1. 很快,结果出来了。
- 2. 情况不妙, 唐氏综合征高风险!
- 3. 已经乘十几个小时火车回老家避暑的娼慌了。
- 4. 赶紧给医生打了个电话,问该怎么办。
- 5. 医生说,这种情况,必须做羊水穿刺确诊。
- 6. "怎么这么倒霉?"电话里娟嘀咕着,有些不甘心。
- 7. "现在只是高风险,还不能明确判断到底有没有问题,也有可能是虚惊一场"医生安慰着娟,"羊水穿刺没有你想象的那么可怕,而且,因为你做的无创产前基因检测有保险,针对双胎,可以报销4000元的羊水穿刺费用。"
- 8. 很显然,医生在试图减轻娟对羊水穿刺的恐惧感。
- 1. Soon, the results came out.
- 2. The situation was not good high risk of Down's syndrome!
- 3. Juan, who had travelled over ten hours by train back to her hometown to escape the summer heat, was caught in a panic,
- 4. she called the doctor in a hurry to ask what she should do.
- 5. The doctor said, under such circumstances, amniocentesis is a must.
- 6. "Why am I so unlucky?" Juan murmured over the phone, unreconciled to the situation.
- 7. "It's just a high risk, we cannot clearly determine whether there is a problem or not, it may be a false alarm" the doctor comforted Juan, "amniocentesis is not as terrible as you think, and, because the non-invasive prenatal genetic testing you used comes with insurance, for twins, you can reimburse 4000 Yuan for amniocentesis."
- 8. Obviously, the doctor was trying to reduce Juan's fear for amniocentesis.

The above example represents the voices of the protagonist (in the direct speech format in line 6) and the medical professional (in the reported and direct speech formats in lines 5 and 7 respectively). The woman's speech is an emotive evaluation of what has happened to her; the doctor's voice is authoritative. The use of direct speech functions to create a sense of authenticity of the narrative: although a vicarious experience, it is narrated through the voices of the main characters. Incidentally, we note in line 7 the intrusion of monetary considerations, purportedly the comforting words of the doctor, as explained by the short interruptive evaluation by the teller, yet with clear promotional potential for the company.

Another notable feature of the analysed NoVE regarding the 'voice of lifeworld' is the level of intimate details regarding the protagonists. Norrick (2013: 396) maintains, "when stories of vicarious experience are told for their value as illustrations, they may remain sketchy, characterization and details may be minimal". In contrast, the NoVE in our corpus include abundant descriptions, as Example 4 demonstrates:

Example 4

- 1. 丽(化名)29岁,已经生育了两个活泼可爱的女儿。
- 2. 可能是为了给家里续上香火,丽又怀孕了,
- 3. 肚子渐渐隆起。
 - [....
- 4. 丽的担心变成了现实,
- 5. 她仍然"不死心"
- 6. 双方家长都不相信这个事实。
- 7. 虽然是一百个不甘心,但丽还是多少了解了这种疾病的,
- 8. 情感面前,她保留了一丝理智。
- 9. "如果确定孩子有问题,那肯定不敢生",微信中,丽表明了自己的态度。
- 1. Li (pseudonym), 29 years old, had given birth to two lovely daughters.
- 2. Li was pregnant again,
- probably because she wanted to continue the family name for her family.
- 3. Her belly grew day by day.
 - [...]
- 4. Li's worry has become a reality,
- 5. but still she did not give up.
- 6. Neither she nor her husband's parents believed this fact.
- 7. Though extremely unreconciled to the situation, Li has some understanding of the disease,
- 8. she maintained a trace of reason ahead of her emotions.
- "If the child is confirmed to have problem, I would definitely not dare to give birth", Li expressed her attitude on WeChat.

This example comes from the Orientation and the Complication parts of the second NoVE about Down's syndrome screening. The teller elaborates on the personal life details of the protagonist and characterises her inner, mental world (i.e. lines 4–8) in reaction to the Down's syndrome diagnosis for her unborn baby. The direct speech in line 9 represents the woman's reproductive choice (termination of pregnancy) narrated in her own voice. Such intimate details would normally be only known either by the protagonist herself or people very close to her. Displaying access to these details creates a sense of authenticity of the story, which functions to background its fundamentally promotional nature. The intimate details also make this story more tellable and are more likely to keep the attention of the audience.

3.2.2. Enhancing tellability: extreme case formulations and emotive language

We now turn our attention to tellability, another narrative dimension (Ochs and Capps, 2001) that the companies actively harness to enhance the promotional value of the analysed NoVE. The narratives feature instances of extreme case formulations (Edwards, 2000; Pomerantz, 1986) and highly emotive language that enhance the dramatic effects of narration, making the narratives more tellable and attractive to the audience:

Example 5

```
1. 那是一次让娟终生都无法忘记的产检经历.
2. 五六个人按着她,
3.3个小时,一共扎了4针,
4. 都快疼死了。
5. 结果出来后.
  确定其中一个宝宝是正常的,不是唐氏儿,
6. 另一个因为羊水培养失败,
  结果不明确
7. 需要重新抽羊水检查。
8. "什么?要重新抽羊水检测?!"娟惊呆了。
1. That was a check-up experience that Juan would never forget in her lifetime,
2. five or six people held her down,
3. she was punctured four times altogether in three hours.
4. she almost died from the extreme pain.
5. After the result came out.
  it showed that one of the babies was normal, not a Down's syndrome child.
6. the result for the other one was uncertain,
  because amniotic fluid culture for the other baby failed.
7. so there was a need to redraw amniotic fluid for another check-up.
8. "What? Another amniotic fluid redraw?!" Juan was astonished.
```

Example 5 contains extreme case formulations in the form of exaggerated statements about the protagonist's experience of undergoing amniocentesis (e.g. '一次让娟终生都无法忘记的产检经历', 'a check-up experience that Juan would never forget in her life' in line 1; '都快疼死了', 'she almost died from extreme pain' in line 4). Also contributing to the dramatic effect is the recount of being 'punctured' multiple times in the space of several hours, the need to be held by five or six people because of the extreme pain. Once again, in this narration we can see a detailed description of the protagonist's inner thoughts and emotional reactions (e.g. '惊呆了', 'astonished' in line 8) that would normally not be accessible to narrators other than a protagonist himself/herself or close people to whom the protagonist may have confided. These extreme case formulations and emotive language make the stories more striking and newsworthy (Fludernik, 1996: 54), facilitating the companies' promotional agendas by appealing to the interest of the followers of the social media posts.

3.2.3. Story evaluation: companies' reasons for telling the stories

Contrary to Norrick's (2013) observation that NoVE derive most of their evaluation from contextual relevance rather than relying on explicit evaluation, the three NoVE discussed here feature explicit Evaluation parts where both tellers clearly state their motives for telling the stories. The teller of the Down's syndrome stories establishes the purpose as follows:

Example 6

```
    分享这两个故事,
就是希望公众改变不正确的观念,充分重视产前检查。
    The reason why I share these two stories is that
I hope the public will change their misconceptions, and pay
full attention to prenatal check-up.
```

The teller takes an altruistic stance, asserting that his primary aim is to address the general public's misconceptions about Down's syndrome. The reason for telling and contrasting the two narratives about Down's syndrome screening becomes apparent as he urges the public to '充分重视产前检查' ('pay full attention to prenatal check-up'), which involves genetic testing. Similarly, in the bowel cancer risk narrative the teller presents the following information:

Example 7

- 1. 本案例为受检者本人主动分享
- 2. 所有的照片和检测报告均由受检者本人授权发布,
- 3. 希望更多的朋友通过基因检测把握健康主动权。
- 1. This case was voluntarily shared by a user of genetic testing,
- 2. all the pictures and test reports have been authorized for posting by the user himself.
- 3. I hope more and more friends can take the initiative in their health through genetic testing.

The teller first emphasises the authenticity of the story and re-confirms his telling rights by mentioning voluntary sharing and authorization by the client to post the information on social media. The aim of telling the story is formulated as an encouragement to the general public to use genetic testing to determine their risks of genetic susceptibility to disease and, therefore, to take control of their health. The question of whose voices the tellers are actually representing arises here. The aims of narrating these stories are explicitly formulated by the tellers as public education (resolving misconceptions about genetic conditions and genetic testing) and health promotion (empowering individuals to take charge of their genetic health), foregrounding the 'ethical value' (Mazanderani et al., 2013) of the NoVE. However, more mercenary motivations might well be expected, given the context in which these NoVE occur. As genetic testing becomes a new commodity in the modern market society, the companies that provide it are first and foremost driven by marketing and promotional agendas (for a detailed discussion see Zavts and Luo, 2017). While the authoritative voices of professionals in these contexts can be read as a genuine medical advice, it can also be interpreted as the company employees' manoeuvring of the general public into undertaking genetic testing, and as a result boosting the companies' profit from sales. The very explicit voices of the tellers (i.e. company employees) in the Evaluation part of these NoVE are thus not coincidental but a strategic attempt to influence the decisions of the lay public about using genetic testing. By framing the purpose of storytelling in terms of ethics, the tellers mask the overtly promotional content within the narratives to facilitate the companies' marketing agendas. This indicates a predominantly 'economic value' (Mazanderani et al., 2013) that the companies attribute to the narratives. This duplicity is especially concerning in connection with certain genetic tests available online, for which there are concerns over the accuracy of the results (Tandy-Connor et al., 2018).

3.3. NoVE in non-medically indicated contexts of genetic testing

In this section we turn our attention to the story about the emerging non-clinical context of genetic testing that claims to offer people information about their physical traits and abilities (e.g. athletic and memory abilities) and health risks. Like the examples discussed above, we examine discourse and rhetorical strategies employed by the tellers to foreground the authenticity and enhance the tellability of the analysed NoVE to make the stories more appealing to the target audience.

Unlike the tellers in the previous examples, the teller of this NoVE did not have first-hand involvement with the protagonist. The story 'was told' to the teller through an e-mail that the protagonist sent to the company. This NoVE thus represents an example of how telling rights may be 'granted' to tellers in CMC, in this case 'by proxy' through e-mail communication. Again, in following the Labovian structure, the narrative begins with the Abstract that summarizes the protagonist's superior genetic makeup. The Orientation introduces the protagonist Xiaozhang (pseudonym) as an independent fitness trainer who did genetic testing with the company. In the Complication part, Xiaozhang's superior genetic makeup (i.e. low health risks, superior athletic ability) is presented and explained with reference to his parents' experiences in the harsh environment of Tibet. The teller continues to narrate how Xiaozhang grew from an adolescent amateur to a professional athlete, and eventually an independent fitness trainer. The Resolution gives information about how the protagonist lives a life filled with sports and exercise. The Evaluation and the Coda take the form of an interview between the company and Xiaozhang, who focuses his responses on the significance of genetic testing.

3.3.1. Creating authenticity: foregrounding the 'voice of the lifeworld'

In contrast to the NoVE about genetic testing for medically-indicated reasons, the medical voice is backgrounded and subdued in the NoVE about non-medically indicated testing. The medical descriptions, while present, are presented in more accessible, lay language. By foregrounding 'the voice of the lifeworld' and connecting the story to 'real' people, the teller makes the narrative more authentic:

Example 8

万中无一的基因达人,会是怎样的狠角色?

- 1. 小张其实一点也不狠。
- 2. 用这个字眼是为了表达我们对他的膜拜:
- 3. 他的基因检测结果实在是属于顶配级
- 4. 一不仅健康风险大大少于平均数, 多项体质特征也是傲于常人。

A one-in-a-million genetic elite, what a savage figure might he be?

- 1. Xiaozhang is actually not savage at all.
- 2. We use this word to show our worship of him:
- 3. his genetic test results are really among the top configuration
- 4. not only are his health risks significantly lower than the average, but also, many of his physical traits are unrivalled by ordinary people.

The teller strategically foregrounds the protagonist's superior physical qualities which are established through a number of exaggerated statements ('万中无一', 'one-in-a-million'; '基因达人', 'genetic elite'). The protagonist is queried to be '狠' ('savage'), a derogatory descriptor by which the teller elaborates exactly what he/she means: '狠' ('savage')' is used to convey the physical, strong side of the protagonist. The protagonist's physical superiority is conveyed through extreme case formulations, such as '顶 配级' ('top configuration') and '傲于常人' ('unrivalled by ordinary people)'. The protagonist is to be '膜拜' ('worship[ped]'). While the example contains a reference to the protagonist's health risks, they are presented descriptively, as being '大大少于平均数' ('significantly lower than the average'). As discussed above, such descriptive representations of risk render them more understandable to the general public. Also facilitating risk understanding is the use of the contrast devices in risk descriptions:

Example 9

- 1. 在((公司))目前的检测用户中,大部分人都带有10项以上的需要关注的健康风险。
- 2. 而小张,仅仅只有6项健康风险,
- 3. 而且没有一项患病倍数高于3倍。
- 4. 即便是风险最高的霍奇金淋巴瘤风险,只是平均值的2.96倍。
- 5. 而有着同样风险项的我司某帅锅,竟然高达7.23倍。
- 1. Among the current users of ((company)), the majority have over 10 health risks that need attention.
- 2. However, Xiaozhang only has 6 health risks.
- 3. and none of them is over 3 times higher than the average level.
- $4. \ \ \text{Even for Hodgkin's lymphoma for which he has the highest risk, the level is only 2.96 times higher than the average.}$
- 5. But for a handsome guy in my company who carries risk for the same disease, it is surprisingly as high as 7.23 times.

Although contrast is constructed mainly through the numeric formulations that are the preferred way of risk assessment by professionals, the comparison with the average general public makes it more understandable. For example, in line 1 the company asserts that the protagonist's risks are much fewer than in most people. This idea is conveyed by the delimiting adverbial descriptor '只' ('only') in line 2. The same adverbial descriptor '只' ('only') is used in line 4 to describe the protagonist's relatively low risk for Hodgkin's lymphoma. The negative formulation in line 3 ('没有一项患病倍数高于3倍', 'none of [the risks] is over 3 times higher than the average level') also coveys this idea that the risks are not high. Finally, a comparison with '我司某帅锅' ('a handsome guy in [the teller's] company') makes this description very personal and concrete. It is not only a statistical comparison with general 'others', it is an individual comparison with a 'real' person, which potentially enhances the authenticity of the narratives.

The 'voice of the lifeworld' is also heard in the narrative through the direct and reported speeches of the protagonist which contributes to the authenticity of the NoVE. Notably, only the protagonist's perspective is brought into the explicit narration, as in Example 10:

Example 10

- 1. 小张说,良好的身体素质应该是源自家族遗传。
- 2. 早年间父母在西藏工作
- 3. 身体就能经受高原严酷环境的考验,
- 4. 并且也酷爱多种运动。
- 5. 基因检测验证了这种遗传
- 6. 并且,也提醒他注意健康风险,让自己的身体更加完美。
- 1. Xiaozhang said, his good physical qualities must have originated from family inheritance.
- $2\,.$ His parents worked in Tibet in the early years,
- 3. so their bodies were able to stand the test of the harsh environment of the plateau,
- 4. in addition, they were also keen on a variety of sports.
- 5. Genetic testing has proved such inheritance,
- 6. and it also reminds him to pay attention to his health risks to make his body even more perfect.

The teller employs the consumer's reported speech to explain his own superior genetic makeup. According to Xiaozhang, his physical abilities are inherited from his parents who had endured the '严酷环境' ('harsh environment') of Tibet. The medical voice is more implicit, it is conveyed through the positive descriptions about the utility of genetic testing that '验证…遗传' ('prove[s] … inheritance') and '提醒…注意健康风险' ('reminds [one] to pay attention to [one's] health risks'). The use of reported speech means that there is no clear deictic distinction between the content attributed to the Xiaozhang and the teller (i.e. the company employee). The positive descriptions about genetic testing could therefore feasibly be attributed to the consumer, which again functions to mask the explicitly promotional nature of the NoVE by employing the consumer's voice.

A strategy that brings in the voices of both the teller and the protagonist is found at the end of the narrative: an interview between the two participants where both voices become explicit. The company employee is the interviewer, and the protagonist is the interviewee; together they co-construct the story about the significance of genetic testing, as Example 11 demonstrates:

Example 11

- 1. 您觉得基因检测的最大意义在哪里?
- 2. 它能让你真正了解自己的身体,从而优化自己的生活方式,让生活更变得美好吧。
- 1. What do you think is the greatest significance of genetic testing?
- $2. \ \, \text{It allows you to truly understand your body, to optimize your way of life and to make life more beautiful, perhaps.}$

A question arises here as to why the client who took the test asserts the benefits of genetic testing, rather than a genetic company employee as in the previous examples. The issue of genetic superiority is a very sensitive one, bordering on eugenics. One possibility therefore, is that the companies behind the stories need to be particularly careful about how the benefits of genetic testing for non-medical reasons are framed. This issue may be even more tenuous in the context of Mainland China where, until very recently, a very stringent population policy was enforced by the government. By drawing on the voice of the lay public, non-official voices, the companies avoid any accusations of eugenics; however, they still promote and market their products indirectly as the focus of these types of narratives is heavily placed on the benefits of testing.

3.3.2. Enhancing tellability: extreme case formulations

Similar to the NoVE in medically-indicated contexts, the narratives about non-medically indicated testing also feature extreme case formulations that enhance their tellability and appeal. However, in contrast to the formulations that concern the unexpected, shocking nature of the test results in the previous narratives, the formulations in the latter build around a congruent image of an athlete and fitness coach with a superior genetic makeup:

Example 12

- 1. 他的现实经历,也印证了其强大的基因;
- 2. 曾经的国家一级体操运动员、全国健美操冠军、现在经营着一家独立的健身工作室-
- 3. 属于靠运动吃饭,活得特别漂亮的那种!
- 1. His real-life experiences also confirm his superior genes:
- 2. a former tier-1 national gymnast and national aerobics champion, he now runs an independent fitness studio-
- 3. he belongs to the type who make a living with sports and lead an extremely fantastic life.

In Example 12, the teller draws on several highly positive evaluations of the protagonist to highlight his impressive sports career (e.g. '一级', 'tier-1'; '全国', 'national'; '独立的', 'independent'). The overall evaluation in line 3 foregrounds the protagonist's ability to make a living with sports, and to lead a '漂亮的' ('fantastic') life. All these 'extreme' achievements of the protagonist are utilised as evidence of his superior genetic makeup. The conflation of the protagonist's successful lifeworld experiences and his superior genetic makeup creates an ideal image of a healthy, athletic person that the followers of the social media may aspire to become. In a sense, this is also an extreme case scenario, one on the utmost positive side of the spectrum. While medically-indicated testing helps avoid extreme negative scenarios, in the case of non-medically indicated tests, they can help people achieve 'extreme' positive or enhancing results.

4. Discussion and conclusion

In this paper we have explored how genetic testing companies in Mainland China strategically employ a variety of different NoVE on their social media to market and promote genetic testing. The NoVE we analysed are structurally complex, representing themselves in the form of either compound narratives or NoVE proper. The vicarious mode of narration provides the companies with considerable freedom in constructing stories about their clients. The tellers (i.e. genetic company employees) draw on professional authority and protagonists' explicit authorisation to establish their epistemic rights to tell the stories. We have observed the prototypical Labovian structure in all the NoVE, with prominence given to particular elements. Besides an explicit Evaluation that represents the significance of storytelling, each narrative is characterised by an extended Complication that presents the crux of the stories. Since the storytelling is primarily driven by promotional agendas, elaborating on the Complication part may not be coincidental. The long Complication provides the genetic companies with sufficient space to characterise their protagonists, providing rich life details about them to enhance the authenticity and the tellability of the NoVE.

In both medically- and non-medically indicated genetic testing scenarios, various discourse and rhetorical strategies are employed to foreground the authenticity and enhance the tellability of the stories. Our finding of the heteroglossic (Bakhtin, 1981) interplay of the 'voice of the medicine' and the 'voice of the lifeworld' to make the stories more authentic has parallels with the 'autobiologies' explored by Harris et al. (2014). In both we see the intersection of mundane everyday life and genomic science, the prosaic as it connects with something existential. In the case of Harris et al. (2014), this involves visuals of everyday surroundings — a bedroom, a living room — which are transformed by their being the setting for genomic testing and the interweaving of genetic test findings into an ongoing family narrative. In our data this interplay is made into something more dramatic. We find vital, life changing and sometimes unexpected genetic information presented, but first and foremost it is put forward as lived experience, highlighting the real-life relevance for everyone. For the most part, we are introduced to ordinary people, like Juan and Director Zhao, with ordinary lives, and for whom genetic testing was of profound importance.

The telling of clients' stories for marketing purposes reflects a recent trend in the era of digital health when patient narratives are increasingly being commodified for their commercial value (Lupton, 2014). As Mazanderani et al. (2013: 894) observe "it is precisely through maintaining both a connection with a particular individual and separating out their experiences into a packaged, distributable form (such as in an autobiography or a blog post) that illness narratives become commodities". The sharing of lifeworld stories about 'real' people who benefit from genetic testing may persuade lay consumers to purchase genetic tests. The focus on the lifeworld has a dual function of creating authenticity (Tolson, 2001, 2010)

and making the stories more relevant to the general audience, namely, ordinary people like the protagonists. Indeed, authenticity has long been recognised as fundamental to advertising (Stern, 1994). In traditional commercial advertising, the created character — the persona — persuades the audience to consume. As Stern notes, "senders and recipients acquiesce in a fiction that an advertisement is a replica of real life" (1994: 389). In the case of our data, no such fiction is assumed, for the personas are presented *as* real. Stern's comments on the blurring of distinctions between advertisements and non-commercial media are relevant here. When the explicit involvement of the commercial company is supressed and authenticity is foregrounded, the voice behind the promotional nature of the discourse is concealed.

As discussed above, the strategic use of extreme case formulations and the explicit Evaluation sections of the NoVE work to enhance the tellability of stories about clients. Tellers explicitly state their motives for telling the stories, foregrounding the 'ethical value' (Mazanderani et al., 2013) of telling the NoVE (i.e. promoting genetic health). Highlighting the benefits of genetic testing and presenting dramatic, cautionary tales of possible repercussions of opting not to test help the companies promote the tests in the new commodity market that may not yet be well known to the general public. At the same time, this also works to conceal the companies' marketing agendas.

Altogether, foregrounding authenticity and enhancing tellability of NoVE about clients are powerful strategies by which genetic testing companies are commodifying them for their promotional and commercial values, together with genetic testing itself, in the emerging consumer market. Novel (non-invasive and less risky) testing techniques in more familiar clinical settings of prenatal screening and cancer may attract a new clientele, whilst commodifying life-enhancing testing for genetic traits largely unknown to the general public opens up a field of opportunity of appealing to an untapped market. Our concern is that genetic testing companies are supressing or obscuring their own involvement and interests in the production of NoVE about clients. With the blurring of altruistic sharing of stories and marketisation of products, there is a need for better consumer awareness and knowledge of the utility of such tests. We would welcome and encourage more widely available information about the scope and value of genetic tests on the market from independent sources, which would support members of the public in their decision making. If this continues to be left only to the marketers of tests, then the information provision will remain biased. The greatest risk is that members of the public pursue genetic testing with restricted understanding of the limitations of the results and act (or do not act) in ways which are not of most benefit to their health and wellbeing.

It should be noted that the corpus size of our study may not allow to draw generalizable conclusions. However, broadly generalizable claims are outside of the paradigm of qualitative studies and may reflect a quantitative-centric way of approaching research. While the findings of this study are specific to the context of social media advertising about genetic testing in Mainland China, we hope that this study has provided a perspective into the role of NoVE in the commodification and marketization of healthcare services more broadly.

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Appendix A. Supplementary data

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