

# Unveiling the Language of Ideology in China's Environmental Planning Pilot Ecolinguistic Analysis of an Environmental Impact Assessment

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**Abstract** While predominantly seen as a technical process, environmental planning is in fact largely shaped by cultural and ideological factors. Ecolinguistics offers a coherent approach to analyse these elements, by unearthing their linguistic traces and exposing how they naturalize social-ecological goals. So far, limited efforts have gone into developing tools for a systematic ecolinguistic analysis of Chinese texts informing environmental decision-making. This paper seeks to address this gap, by introducing a novel ecolinguistic framework and the results of its application on a Chinese Environmental Impact Assessment (EIA) report.

**Keywords** Ecolinguistics. Chinese. Ideology. Environment. Politics. Impact assessment.

**Summary** 1 Introduction; – 2 Goals and Structure of the Paper. – 3 Methods. – 3.1 Conceptual Background and Definitions;. – 3.2 Case Selection. – 3.3 Ecolinguistic Analytical Framework Design. – 4 Analysis . – 4.1 Abstractions. – 4.2 Technicalities. – 4.3 Appraisal Items. – 4.4 Modality. – 4.5 Temporal Markers. – 4.6 Participants' Role. – 4.7 Forms of Address. – 5 Discussion of Results. – 6 Conclusions.



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## 1 Introduction

Planning the use of the environment for human purposes is generally considered a technical process, aimed at defining sustainability trade-offs based on scientific standards. As a matter of fact, cultural and political factors significantly influence these processes. Although their role is often overlooked in today's techno-centred debate on sustainability, ideologies are as important as biological or biophysical indicators in shaping environmental decisions. China makes no exception. If anything, the Party-State technocratic political culture exacerbates this approach, by portraying the outcomes of decision-making as grounded on solid, 'scientific' evidence. This narrative is commonly employed to legitimise goals that are eminently political, while marginalising alternative visions (Greenhalgh 2008; Brombal 2019). This is of great relevance for the relationship between human beings and the rest of nature, since it constrains possibilities to experiment different pathways to sustainability transformations.

Language plays a key role in these processes, by setting the boundaries of what can be considered morally right, socially acceptable, and institutionally viable. A vast body of literature has analysed the potential of discourses and language to normalise the social and political reality in communist China (Schoenals 1992). The centrality of language surfaces also in works that do not primarily address linguistic issues. Such is the case of Shapiro's (2001) influential work on environmental politics in Maoist China, where she touches upon the role of lexical choices in legitimizing anthropocentric worldviews.

## 2 Goals and Structure of the Paper

Against this background, the main goal of our work is to deepen our understanding of (a) how judgments and visions about human-nature relations are embedded in language and discourses; and (b) how this can influence the outcome of decision-making processes. To this end, we focus on texts produced for Environmental Impact Assessment (EIA) procedures, aimed at evaluating the expected environmental consequences of proposed infrastructural projects (Brombal 2023).

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This study stems from the close collaboration of the three Authors. For the concerns of the Italian Academy, Daniele Brombal is responsible for Sections 1, 2, 3.2, 3.3, 5, and 6, Pui Yiu Szeto is responsible for Sections 3.1, 4.1, 4.2, 4.3, and 4.4, and Sergio Conti is responsible for Sections 4.5, 4.6, and 4.7. This research work has been funded by the EU-funded Italy's National Operative Programme (NOP) under action VI.6 (2021) and by the programme "Dipartimenti di Eccellenza 2018-2022", funded by the Italian Ministry of Education, University, and Research. The Authors report there are no competing interests to declare.

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EIA reports are of particular interest for two reasons. First, because they play a fundamental role in the approval of projects with potentially vast and long lasting consequences on people and nature. The second reason lies in the mandatory public consultation and information disclosure in EIAs, as a consequence of which the EIA reports can reach a wide public and influence the debate about specific projects and environmental planning more in general.

Despite its importance, EIA is largely under-investigated from a linguistics standpoint, whereas other genres attract most of the attention (e.g. political speech, science fiction). To contribute addressing this gap, we designed a novel ecolinguistic framework of analysis and tested it on the introductory section of an EIA report. This paper is structured as follows: we first share our methods, introducing both the process employed to design our analytical framework and the case study (§ 3). In the two following sections we share the results of our analysis across linguistics criteria considered in our framework (§ 4) and discuss them vis-à-vis the key goals of our work (§ 5). In the conclusive section, we briefly introduce the significance of our results for research, policy, and practice, touching upon the potential for future applications of our ecolinguistic framework (§ 6).

### **3 Methods**

#### **3.1 Conceptual Background and Definitions**

The emergent field of ecolinguistics is concerned with the role of language in the life-sustaining interactions of humans with other species and the biophysical environment; in particular, it “is about critiquing forms of language that contribute to ecological destruction and aiding in the search for new forms of language that inspire people to protect the natural world” (Stibbe 2021, 1). From a methodological standpoint, ecolinguistics draws from critical discourse studies and applied linguistics (LeVasseur 2015). These approaches and methods, especially Ecological Discourse Analysis (EDA), are employed to explore “how the natural ecology is represented in language” (Li, Steffensen, Huang 2014, 4) and to detect and analyse deeply ingrained cognitive structures - which Stibbe (2021) defines ‘stories’ - which influence thought and behavioural patterns at individual and social level. Ecolinguistics is based on the twofold assumption that these stories can be revealed through linguistic analysis and that changing the way we use language can change the way we think, talk, and act. Against this background, ecolinguistics researchers attempt to correlate certain linguistic features to diverse approaches to human-nature relations, ranging from extractive mental models to regenerative ones, whereby humans work with nature to create more

possibilities for life to thrive (e.g. see, among the many others, Doulton, Brown 2009; Caimotto, Molino 2012; Poole 2016; Caimotto 2020; Brown 2022; Mooney 2021). Therefore, in addition to being a valuable scientific approach, ecolinguistics is a powerful tool for engaged scholarship, aimed at shaping more sustainable ways for humans to interact with the environment (Stibbe 2014, 2021).

### 3.2 Case Selection

Our work employs a case study approach. We selected an archetypal case of EIA, exemplifying the best practice in China's environmental planning. Based on previous research by Brombal, Moriggi, and Marcomini (2017),<sup>1</sup> we identified the EIA process for the construction of the new Beijing Airport, which commenced operations in 2019-20, as a suitable case study. The complete report is a lengthy document of over 300 pages. For the purpose of this analysis, we focused on the introductory part of the document, where the project rationale and location overview are provided. This section – referred to as *Qiányán* 前言 'preface' – can be considered as a prologue to the EIA and is of extreme importance for the purpose of our analysis because it sets the stage against which the project is discussed and evaluated. In other words, this section is where the overarching ideology of project assessors surfaces with more clarity, as they try to make the logic of the project and the choice of its location as linear and logical as possible. The section is 5,696 characters long and is composed of four subsections, namely *Xiàngmù bèijǐng* 项目背景 'project background', *Huánjìng yǐngxiǎng píngjià gōngzuò guòchéng* 环境影响评价工作过程 'environmental impact assessment work process', *Xiàngmù zhǔyào huánjìng wèntí* 项目主要环境问题 'main environmental issues of the project', and *Bàogào shū zhǔyào jiélùn* 报告书主要结论 'main conclusions of the report'. The full text is provided in Appendix 1.

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<sup>1</sup> As shown in Brombal, Moriggi, Marcomini (2017, 54), the EIA conducted for the new Beijing Airport was “known among the community of Chinese EIA practitioners and the general public as a virtuous example”, with particular reference to public participation.

### 3.3 Ecolinguistic Analytical Framework Design

For our study, we designed an ad-hoc analytical framework of ecolinguistic indicators, applicable to texts in Chinese language.<sup>2</sup> This was done in a three-stage process of desk review, collaborative design, and experts' panel judgement. The literature review process took place in Winter 2021-22. Authors worked remotely, sharing results of their work via an online drive folder. A total of 112 sources were retrieved via snowballing review and organised in three main clusters: theoretical contributions (no. 57), methodological papers (no. 24), and applicative papers (no. 33). Works written in both English and Chinese were included in the sample. Retrieval of new material stopped when redundancies started to appear. Most sources were in the fields of applied linguistics (corpus linguistics, sociolinguistics, and ecolinguistics), discourse analysis, and – albeit more marginally – environmental politics and public participation. Among reviewed literature, the work by Arran Stibbe (2021) is of particular interest, as it offers (a) a structured approach to identify linguistic features of potential interest for a ecolinguistic analysis (what Stibbe refers to as 'stories'); and (b) a coherent explanation of how such features reflect and translate into different social-ecological norms and values.

The review produced a provisional list of 25 linguistic indicators,<sup>3</sup> which constituted the basis for a collaborative session held by the Authors ('participants' hereafter) in January 2022 in Venice. The purpose of this session was to appraise relevance and sensitivity (i.e. capacity to detect change/variations) of indicators identified in the previous stage. The session started with a checking-in exercise, aimed at sharing participants' expectations and feelings.<sup>4</sup> Participants were then asked to review the indicators individually, displayed in the form of a criteria tree. They were allowed to make slight modifications to it – e.g. to avoid redundancies – as well as to add more specificity to indicators that had been already identified. Once reached a consensus over the overall list of indicators, participants then moved on to start analysing the text identified for the pilot analysis. After a quick scan, Authors went back to the list of indicators, choosing the ones that looked most promising, in view of their relevance for an ecolinguistic analysis. After a break, participants engaged in a more in-depth analysis of the texts, by applying indicators

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<sup>2</sup> This work was the basis for a more thorough framework for Chinese Language Ecological Discourse Analysis Framework (C-LEDA), currently being tested by our research group on a wider corpus of texts.

<sup>3</sup> By indicators, we mean internally coherent sets of linguistic features, of potential interest for characterising social-ecological discourses in Chinese texts. The complete list is provided in Appendix 2.

<sup>4</sup> The session was inspired by the toolkit designed by Pearson et al. 2018.

they had selected in the previous exercise and taking notes of their observations. These handwritten notes were eventually posted and displayed on a large canvass, to facilitate the identification of commonalities and major highlights. After observing the canvass in silence to make a general sense of the overall results of the exercise, participants engaged in a facilitated discussion about the relevance and sensitivity of indicators employed. The pattern employed in this collaborative session was then replicated remotely by the Authors in the following weeks. This iterative process created the space for most relevant and sensitive indicators to gradually emerge from the text analysis and allowed to gradually fine-tune indicators devised for other languages to employ them on a Chinese text.

The second collaborative session was key to finalising this process, by providing external experts' validation to the work done by the Authors. The session was held in March 2022 in Venice, engaging one renowned expert in the field of sociolinguistics and a sustainability scientist with hands-on knowledge of Corporate Social Sustainability (CSR) in China. The session was facilitated by one of the Authors, while a volunteer student kept the records of the session. The two experts were first provided with an overview of the research goals and a detailed explanation of the architecture of the preliminary analytical framework. After a short break, experts were asked to prioritize indicators they deemed as (a) the most relevant from a social-ecological standpoint; and (b) the most capable of producing valuable linguistics data. Both experts concurred in attributing a high degree of importance to aspects related to erasure, i.e. the different linguistic strategies by which contents or aspects can be removed from or overlooked in a text. Overall, the experts' judgment was consistent with previous discussions among the Authors. There was however a noteworthy exception, as the sustainability scientist attributed a higher priority to the indicator 'Participants' role', addressing the way actors and stakeholders are represented in the text. The final outcome of the process was a list of 7 indicators [tab. 1], each encompassing linguistic features of ecolinguistic relevance, whose usage will be discussed in § 4.

**Table 1** Ecolinguistic Analysis Framework

no.	Indicator	Description	Reference
1	Abstractions	Expressions which give a sense of vagueness, instead of providing concrete information	Fairclough 2003
2	Technicalities	Technical terms or expressions which can hardly be understood by people having no specialized expertise on the issue(s) at hand	Stenning 2010
3	Appraisal items	Words or expressions which appraise areas of life (positively or negatively)	Martin, White 2005
4	Modality	Indicates speakers' attitudes concerning the validity, possibility, need, necessity, predictability, insufficiency, desirability, inclination, volition, obligation, permission, and evaluation of an event	Sparvoli 2012; Cheng 2019
5	Temporal markers	Link events into a temporal sequence	Stibbe 2021
6	Participants' role	Representation (active or passive) of the participants in material, mental, or verbal processes	Halliday 2013
7	Forms of Address	The way individuals, communities, and organisations are addressed in the text. Forms of address encompass also expressions employed to invoke a sense of group or national identity, and to separate 'we' from the 'others'	Stibbe 2021

**1** On the process of normalisation of political goals in the field of sustainability (and on the use of the term 'natural' to describe them), see Brombal (2017).

## 4 Analysis

### 4.1 Abstractions

In the text, abstractions mainly come in the form of vagueness, especially when referring to the possible consequences of the airport project on the environment. This phenomenon is exemplified in (1), in which *shēngwùliàng* 生物量 'biomass' is a vague expression which fails to specify what particular plant species are involved. This is an important piece of information which should not be omitted since not all plants are equal from an ecological perspective. Not only different species may deserve different attention (e.g. in the case of rare or

endangered species),<sup>5</sup> but the age of a wooden area and even of a single tree do have significant implications, as older trees provide more ecosystemic services – particularly from an ecological standpoint (Interview with forrester on 23.01.2013; Mazurek, Zielinski 2003).<sup>6</sup> The logic informing the usage of *liàng* 量 ‘mass’ overlooks these aspects. On the contrary, it tells us that what matters is quantity: by treating plants as ‘mass’, we deprive them of any ecological or landscape value. The word implies that trees, shrubs, grass etc. are substitutable: as long as the same amount of mass is recreated or available elsewhere, things are going to be fine.

- (1) *Jīchǎng jiànshè jiāng zàochéng 6.8 wàn t de zhíwù shēngwùliàng sǔnshī.*  
机场建设将造成 6.8 万 t 的植物生物量损失。  
‘The airport construction will lead to 68k tonnes of plant biomass loss’.

Abstraction in the form of vagueness is particularly notable in (2) – first, the environmental impact of exhaust emissions is described as *jiào dī* 较低 ‘relatively low’, without any further elaboration; second, the passage highlights the fact that the current pollution level of the region has already exceeded the national standards, seemingly implying that it is alright to make a bad situation worse.

- (2) *Gēnjù yùcè, èryǎnghuàdàn, PM<sub>10</sub>, PM<sub>2.5</sub> zuìdà rìjūn nóngdù yùcèzhí chūxiàn chāobiāo. Chāobiāo yuányīn zhǔyào shì yóuyú dāngdì de bèijīngzhí yǐjīng chāoguò guójiā biāozhǔn, jīchǎng xiàngmù de fèiqì páifāng duì dāngdì de èryǎnghuàdàn, PM<sub>10</sub>, PM<sub>2.5</sub> de gòngxiànzhi jiào dī.*  
根据预测, 二氧化氮、PM<sub>10</sub>、PM<sub>2.5</sub> 最大日均浓度预测值出现超标。超标原因主要是由于当地的背景值已经超过国家标准, 机场项目的废气排放对当地的二氧化氮、PM<sub>10</sub>、PM<sub>2.5</sub> 的贡献值较低。  
‘According to the forecast, the estimated maximum daily average concentration of nitric dioxide, PM<sub>10</sub>, and PM<sub>2.5</sub> will exceed the limit. The exceedance is mainly due to the fact that the background value of the region has already surpassed the national standards. The effect of exhaust emissions of the airport project on the region’s levels of nitric dioxide, PM<sub>10</sub>, and PM<sub>2.5</sub> is relatively low’.

(3) represents yet another case of abstraction, in which the mass nouns *gèrén diàocházhě* 个人调查者 ‘individual respondents’ and

<sup>5</sup> In this regard, see e.g. the debate that unfolded over the Shanxi orchid during preparations of Beijing Winter Olympics, held in 2022: <https://www.nature.com/articles/nature.2015.18174>.

<sup>6</sup> The theme was popularised in Italy and Europe by botanist Stefano Mancuso, see e.g. his recent *lectio magistralis* here: <https://www.youtube.com/watch?v=aq1u1grv69c>.



*diàochá tuántǐ* 调查团体 'survey groups' are used to refer to stakeholders engaged in consultation during the EIA process. This lexicon has two implications: (a) that such individuals and groups are part of this process only in their capacity of respondents, who act within the boundaries of a procedure, thus depriving them of meaningful agency; and (b) that such individuals and groups constitute a homogeneous entity.<sup>7</sup> This latter aspect is of course reinforced by the staggering proportion of those who reportedly support the project.

- (3) *Běncì gōngzhòng cānyù cǎiqǔ le huánjìng xīnxi gōnggào, fāfàng gōngzhòng diàochábiǎo, zuòtánhuì děng fāngshì, diàochá gōngzhòng yìjiàn. Gòng fāfàng gèrén diàochábiǎo 8000 fèn, huíshōu yǒuxiào biǎogé 7956 fèn, huíshōulǜ wéi 99.4%. Diàochá jiéguǒ xiǎnshì 99.1% de gèrén diàocházhě yǐjǐ 99.8% de diàochá tuántǐ biǎoshì zhīchí běn xiàngmù jiànshè.*

本次公众参与采取了环境信息公告、发放公众调查表、座谈会等方式，调查公众意见。共发放个人调查表 8000 份，回收有效表格 7956 份，回收率为 99.4%。调查结果显示 99.1% 的个人调查者以及 99.8% 的调查团体表示支持本项目建设。

'Public participation was carried out by means of environmental information bulletins, public questionnaires and seminars. A total of 8.000 individual questionnaires were distributed, and 7.956 valid forms were collected, with a recovery rate of 99.4%. The survey results show that 99.1% of the individual respondents and 99.8% of the survey groups supported the construction of the project'.

## 4.2 Technicalities

The use of technicalities is observed in (4) and (5), namely the electromagnetic radiation level of  $0.04\text{W/m}^2$  and the chemical risk value of  $8.33 \times 10^{-5}$ , respectively. It is virtually impossible for a layperson to comprehend such numbers. Even though the unit for sound measurement decibel (dB) in (6) is more widely known, the implications of various noise levels are not mentioned at all. The acronym MBR (membrane bioreactor) in (7) constitutes another technical term which is not intended to be reader-friendly. Overall, it appears that using technicalities in the text is more about creating a sense of authority and trustworthiness than informing the general public. Just as abstractions, they can effectively remove issues from the space of potential debate and contestation.

<sup>7</sup> This paragraph also illustrates the strategic use of quantification in documents of political relevance, in order to remove any possible doubt about the issue at stake – and the way to deal with it. On this and other aspects of political discourse in China, see Greenhalgh 2008.

- (4) *Běn xiàngmù léidá chǎngzhàn, dǎoháng táizhàn děng diàncí fúshè shèbèi duì zhōubiān huánjìng chǎnshēng de diàncí fúshè qiángdù zuìgāo wéi 0.04W/m<sup>2</sup>, dī yú gōngzhòng zhàoshè guǎnlǐ xiànzí (0.2W/m<sup>2</sup>), diàncí huánjìng yǐngxiǎng kěyǐ jiēshòu.*  
本项目雷达场站、导航台站等电磁辐射设备对周边环境产生的电磁辐射强度最高为0.04W/m<sup>2</sup>, 低于公众照射管理限值(0.2W/m<sup>2</sup>), 电磁环境影响可以接受。  
'The maximum electromagnetic radiation intensity brought by electromagnetic radiation equipment of this project like radar stations and navigation stations is 0.04W/m<sup>2</sup>, which is lower than the Public Exposure Management Limits (0.2W/m<sup>2</sup>). Such an electromagnetic environmental impact is acceptable.'
- (5) *Xiàngmù hángkōng méiyóu chǔguǎnqū wéi zhòngdà wēixiǎnyuán, chǔyóuguǎn fāshēng huǒzāi, bàozhà shìgù tiáojiàn xià, SO<sub>2</sub>, CO kuòsàn fànwéi nèi wèi chūxiàn bànzhìsǐ nóngdù qūyù, bù huì chūxiàn rén de shāngwáng. Suǒ chǎnshēng de huánjìng fēngxiǎnzí xiǎo yú tónghángyè de huàgōng fēngxiǎnzí 8.33×10<sup>-5</sup>, shǔ kějiēshòu shuǐpíng.*  
项目航空煤油储罐区为重大危险源, 储油罐发生火灾、爆炸事故条件下, SO<sub>2</sub>、CO 扩散范围内未出现半致死浓度区域, 不会出现人的伤亡。所产生的环境风险值小于同行业的化工风险值 8.33×10<sup>-5</sup>, 属可接受水平。  
'The aviation paraffin storage tank area of the project is a major source of danger. Under the conditions of fire and explosion in the storage tank, there is no semi-lethal concentration of SO<sub>2</sub> and CO in the diffusion area, and no human casualties will occur. The environmental risk value generated is less than the chemical risk value of 8.33×10<sup>-5</sup> in the same industry, which is an acceptable level.'
- (6) *Fēijī zàoshēng (WECPNL) chāoguò 80 fēnbèi de cūnzhuāng yǒu 9 gè, 75~80 fēnbèi fànwéi nèi de cūnzhuāng fēnbéi yǒu 24 gè; chāoguò 70 fēnbèi de xuéxiào yǒu 23 suǒ, qízhōng yǒu 7 suǒ chāoguò 75 fēnbèi; yǒu 1 gè wèishēngyuán chāoguò 75dB.*  
飞机噪声 (WECPNL)超过 80 分贝的村庄有 9 个, 75~80 分贝范围内的村庄分别有 24 个; 超过 70 分贝的学校有 23 所, 其中有 7 所超过 75 分贝; 有 1 个卫生院超过 75dB。  
'There will be 9 villages with aircraft WECPNL (Weighted Equivalent Continuous Perceived Noise Level) above 80 db, 24 villages in the 75-80 dB range; 23 schools above 70 dB, 7 of which above 75 dB; and 1 health centre above 75 dB.'
- (7) *Jīchǎng chǎngnèi gè wūshuǐ dānyuán chǎnshēng de wūfèishuǐ jízhōng shōují hòu, yóu wūshuǐ guǎnwǎng jìnrù chǎngnèi jízhōngshì wūshuǐ chùlǐchǎng chùlǐ, wūshuǐ chùlǐchǎng cǎiyòng de "jiān yǎng-MBR" gōngyì, chūshuǐ jīngguò réngōng hé dào lù jìn yìbù jìng huà hòu shuǐzhì mǎnzú huíyòng biāozhǔn yàoqiú, yī bùfèn huíyòng yú chōngcè, lù huà jí dào lù jiāosǎ, shèngyú bùfèn jìnrù chǎngnèi shēngtài shuǐxì, zuìhòu bù dīngqī de páirù Tiāntáng hé.*  
机场场内各污水单元产生的污水集中收集后, 由污水管网进入场内集中式污水处理厂处理, 污水处理厂采用的“兼氧-MBR”工艺, 出水经过人工河道湿地进一步净化后水质满足回用标准要求, 一部分回用于冲厕、绿化及道路喷洒, 剩余部分进入场内生态水系, 最后不定期的排入天堂河。

'The wastewater generated by each sewage unit in the airport is collected centrally, and then the sewage pipe network enters the centralised sewage treatment plant (which adopts the facultative anaerobic-MBR process) in the airport for treatment. The effluent is further purified by the artificial river wetland and then the water quality meets the reuse standard requirements. Part of the water is reused for toilet flushing, greening and road watering, while the rest is discharged into the ecological water system on site and finally into the Paradise River from time to time'.

### 4.3 Appraisal Items

Appraisal items are used in the text to evaluate the favourability or desirability of the current and future (hypothetical) situations. Examples of inherently positive items include *huǎnjiě* 'to relieve', *cùjìn* 'to promote' (8), *mǎnzú* 'to satisfy' (9), *bǎozhàng* 'to safeguard' (10), and *yǒuxiào* 'effective' (11). Notably, all these items are used to highlight the necessity or describe the positive outcomes of the new airport.

- (8) *Wéi jìnyībù tígāo Běijīng dìqū hángkōng yǔ yùnsū bǎozhàng nénglì, huǎnjiě shōudū jīchǎng róngliàng bǎohé de jǐnzhāng júmiàn, cùjìn qūyù jīngjì de píngwěn, kuàisù fāzhǎn, jiànshè Běijīng xīnjīchǎng yǐ pòzài méijíe.*

为进一步提高北京地区航空与运输保障能力,缓解首都机场容量饱和的紧张局面,促进区域经济的平稳、快速发展,建设北京新机场已迫在眉睫。

'In order to further improve the aviation and transport security capacity of Beijing, relieve the tension of the saturated capacity of the capital airport, and promote the stable and rapid development of the regional economy, the construction of a new airport in Beijing is an urgent necessity'.

- (9) *Mǎnzú Běijīng dìqū hángkōng yèwùliàng kuàisù fāzhǎn de xūyào*  
满足北京地区航空业务量快速发展的需要

'Satisfying the needs of the rapid development of air traffic in Beijing'.

- (10) *Bǎozhàng Běijīng dìqū mínháng shìyè fāzhǎn "chíxù ānquán" de jīchǔ*  
保障北京地区民航事业发展“持续安全”的基础

'Safeguarding the foundation of "sustainable safety" for the development of civil aviation in Beijing'.

- (11) *Zhè jiāng yǒuxiào huǎnjiě Běijīng dìqū kōngzhōng hé dìmiàn yùnháng de yālì, fēiháng ānquán, yùnháng ānquán dòu jiāng dédào bǎozhàng.*

这将有效缓解北京地区空中和地面运行的压力,飞行安全、运行安全都将得到保障。

'This will effectively relieve the pressure on air and ground operations in the Beijing area; flight safety and operational safety will also be ensured'.

On the other hand, inherently negative items like *jǐnzhāng* 紧张 'tension/constraint', *máodùn* 矛盾 'contradiction/conflict' (12), *bùzú* 不足 'inadequate' (13), *yǒuxiàn* 有限 'limited' (14), and *yālì* 压力 'pressure' (15) are repeatedly used in the text. In contrast with the positive terms, these are used to describe the unfavourable conditions of the current circumstances. In addition, the negation adverb *bù* 不 can also be combined with positive items to form negatively marked terms (e.g. *bù pínghéng* 不平衡 'imbalance', *bùnéng mǎnzú* 不能满足 'cannot be satisfied', *bù dǎkāi* 不打开 'not open') to serve the same function.

- (12) *Zài wǒguó mínháng yùnshū yèwùliàng dà fāzhǎn de xíngshì xià, quánguó gèdì jiàowéi pǔbiàn de chūxiàn le jīchǎng róngliàng jǐnzhāng de zhuàngkuàng, Jīng Hù Sù sān dà rèdiǎn dìqū hángkōng yùnshū shìchǎng xūqiú yǔ jīchǎng shèshī bǎozhàng nénglì zhījiān de máodùn tūxiǎn.*

在我国民航运输业务量大发展的形势下, 全国各地较为普遍地出现了机场容量紧张的状况, 京沪穗三大热点地区航空运输市场需求与机场设施保障能力之间的矛盾凸显。

'Under the major development of China's civil aviation transport business, the situation of tight airport capacity has commonly appeared throughout the country, and the contradiction between the demand of the air transport market and the capacity of airport facilities in the three hot spots of Beijing, Shanghai, and Guangzhou has become prominent'.

- (13) *Suízhe shǒudū jīchǎng hángkōng yèwùliàng de kuàisù zēngzhǎng, jīchǔ shèshī bǎozhàng nénglì bùzú, hángxiàn hé shíkè zīyuán jǐnzhāng, hángbān yánwù děng wèntí rìyì tūxiǎn.*

随着首都机场航空业务量的快速增长, 基础设施保障能力不足、航线和时刻资源紧张、航班延误等问题日益凸显。

'With the rapid growth in the volume of air traffic at the Capital Airport, the problems of inadequate infrastructure, route and time resources, and flight delays have become increasingly evident'.

- (14) *Běijīng dìqū tǔdì zīyuán yǒuxiàn*

北京地区土地资源有限

'Land resources in the Beijing area are limited'.

- (15) *Mùqián, shǒudū jīchǎng kōngyù bǎozhàng nénglì yǐ jìn jíxiàn, kōngzhōng hé dìmiàn yùnshū yālì jí dà, ānquán yùnshū hé hángbān zhèngchángxìng shòudào yǐngxiǎng.*

目前, 首都机场空域保障能力已近极限, 空中和地面运行压力极大, 安全运行和航班正常性受到影响。

'At present, the airspace of the Capital Airport is nearing its limit, and the pressure on air and ground operations is extremely high, affecting safety and flight normalcy'.

The pattern is very clear. Positive appraisal items are used to highlight the (economic) benefits that the new airport will bring, but not used to talk about the ecological and environmental aspects at all. Conversely, negative appraisal items are regularly used to talk about the current situation (i.e. the existing airports not being able to cope with the increasing traffic) or the future outcome if the new airport is not built.

#### 4.4 Modality

In the text, modal verbs are employed to express (in)ability, necessity, and (im)possibility. First, the modal verb *xū(yào)* 需(要) 'need' is used to express two kinds of necessities, namely (i) participant-internal necessity (need) of the new airport (due to the inadequacy of the existing airports) (16-17) and (ii) participant-external (practical) necessity, i.e. measures which have to be taken in order to deal with the environmental impact of the airport project (18-19).

- (16) *Běijīng pòqīè xūyào yīgè néng zúyǐ chéngzǎi wèilái hángkōng xūqíu de xīnjīchǎng*  
北京迫切需要一个能以承载未来航空需求的新机场  
'Beijing urgently needs a new airport large enough to carry future aviation demand'.
- (17) *Běijīng xīn jīchǎng de jiànshè, yǐngxiǎng de yuǎn bùzhǐ jīchǎng zìshēn héxīnqū de dìyù kōngjiān, línfēi chǎnyè de fāzhǎn xūyào zhōubian guǎngkuò de fùdì.*  
北京新机场的建设,影响的远不止机场自身核心区的地域空间,临飞产业的发展需要周边广阔的腹地。  
'The construction of Beijing's new airport will affect much more than just the geographical space of the airport's own core area; the development of preflight industry requires a vast surrounding hinterland'.
- (18) *Jīchǎng de jiànshè jiāng huì duì Dàgǔyíng shuǐyuándì de zhèngcháng gòngshuǐ zàochéng yǐngxiǎng, xū cǎiqǔ bānqiān cuòshī.*  
机场的建设将会对大古营水源地的正常供水造成影响,需采取搬迁措施。  
'The construction of the airport will have an impact on the normal water supply to the Daguping water source, necessitating relocation measures'.
- (19) *Yóuyú jīchǎng jiànshè zhànyòng shuǐyuándì bùfèn shuǐyuánjǐng jí qí gòngshuǐ gòngdiàn xiànlù, duì shuǐyuándì gòngshuǐ zàochéng jiàodà yǐngxiǎng, shuǐyuándì xū guānbì bìng xuǎnzǐ lìngjiàn.*  
由于机场建设占用水源地部分水源井及其供水供电线路,对水源地供水造成较大影响,水源地需关闭并选址另建。

'Due to the airport construction occupying part of the water source wells and their water and electricity supply lines, water supply of the water source will be considerably affected; the water source needs to be closed and an alternative site chosen'.

Meanwhile, though *biyào* 必要 'must/necessary' is a noun and is therefore not listed among the high-frequency modals (which typically consist of verbs and adverbs; in this regard, see Sparvoli 2012), it is worth noting that *shì biyào de* 是必要的 is a commonly used modal expression that is equivalent to 'to be necessary' and conveys the idea of practical necessity. This expression is repeatedly used in the text to emphasise the practical necessity of the new airport (20-21).<sup>8</sup>

- (20) *Běijīng xīn jīchǎng de jiànshè shì biyào de.*

北京新机场的建设是必要的。

'The construction of the new Beijing airport is necessary'.

- (21) *Běijīng dìqū jiànshè lìng yī gè dàxíng jīchǎng shì biyào de, yě shì hélǐ de*

北京地区建设另一个大型机场是必要的,也是合理的

'Building another major airport in the Beijing area is necessary and justified'.

The modal verbs *néng* 能 'can' (16) and *kě(yǐ)* 可(以) 'can' (22) are used to talk about what the new airport is able to bring to Beijing and its neighbouring regions. Together, they convey the essential message of the entire argument, i.e. the need for a new airport that can fulfil a specific demand due to the inadequacy of existing options.<sup>9</sup>

- (22) *Bùdàn kěyǐ zuòwéi Běijīng de xīnjīchǎng, yěkě wéi Tiānjīn Bīnhǎi jīchǎng tígòng biànlì de bèijiàng fúwù, hái kěyǐ míbù Héběi běibù méiyǒu dàxíng jīchǎng de quēhàn*

不但可以作为北京的新机场,也可作为天津滨海机场提供便利的备降服务,还可以弥补河北北部没有大型机场的缺憾

'It will not only be able to serve as a new airport for Beijing, but also provide convenient backup and landing services for Tianjin Binhai Airport, and make up for the lack of a large airport in northern Hebei'.

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<sup>8</sup> Interestingly, as observed by Cheng (2019), the authority in Taiwan tends to minimise the use of high-intensity items like *bìxū* 必须 'must' and *xū(yào)* 需(要) 'need' to avoid inducing an antagonistic feeling among the people. Apparently, this concern may be less relevant to the political context of Mainland China.

<sup>9</sup> The modal notion of inadequacy is also expressed in (13) and (26) through the use of the adjective *bùzú* 不足 'inadequate'. The modal nuance of these statements is further reinforced by the preceding noun *néng(lì)* 能(力), which carries modal connotations of 'ability/capacity'.

Regarding (im)possibility,<sup>10</sup> both *huì* 会 'will' and its negatively marked form *bùhuì* 不会 'will not' are used to talk about the environmental impact of the project, in which the former conveys a strong likelihood (19, 23) while the latter a strong unlikelihood (5, 24).

- (23) *Qūyù shēnghuánjìng zhìliàng huì fāshēng xiǎnzhù biànhuà*  
区域声环境质量会发生显著变化

'Significant changes in the quality of the regional acoustic environment will occur'.

- (24) *Yóuyú páishuǐ shuǐzhì yǐ jùbèi jǐngguānshuǐ gōngnéng, yīncǐ jiāng bùhuì duì Tiāntánghé jí qí xiàyóu de yǒngdìnghé shuǐzhì zàochéng fùmiàn yǐngxiǎng.*

由于排水水质已具备景观水功能，因此将不会对天堂河及其下游的永定河水水质造成负面影响。

'As the water quality of the discharge is already functioning as landscape water, there will be no negative impact on the water quality of the Paradise River and the Yongding River downstream'.

#### 4.5 Temporal Markers

Temporal markers convey explicit temporal/logical connections of events, providing structure to reality. They play a central role in shaping the dominant worldview and become politically enabling of social transformation (Stibbe 2021).

In terms of the temporal sequence of events, the document presents a simple past-present-future progression which is reiterated throughout the whole text.

In the first section of the document, chronological order serves the two main goals of providing a detailed account of the events that led to the current situation and predicting possible future scenarios. Section 1.1.1 (*jiànshè bèijǐng* 建设背景 'construction background') describes how the constant growth of air traffic has increased the pressure on the existing facilities starting from the Chinese economic reform (*Gǎigé kāifàng* 改革开放) during the '80s.

In addition to time expressions (*mùqián* 目前 'currently') and exact dates (*jiézhǐ 2011 nián 12 yuè dǐ*, 截止 2011 年 12 月底, 'since the end of December 2011'), this section employs a variety of elements expressing temporality. For example, the adverb *yǐ* 已 'already' refers to events that happened in the past influencing the current state of

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<sup>10</sup> Alternatively, *huì* may be analysed as a marker of futurity. As Lin (2012) discusses, *huì* is an epistemic modal which happens to convey a future interpretation for its complement in affirmative statements. Specifically, in examples (5), (23), and (24), *huì* exhibits a futurity interpretation, expressing a strong prediction. We extend our gratitude to an anonymous reviewer for bringing this observation to our attention.

affairs. Thus, the events marked by *yǐ* are presented as an unquestionable reality. Another interesting feature is the extensive use of verbs (*zēngzhǎng* 增长 'increase'; *dádào* 达到 'reach'), adverbs (*niánjūn* 年均 'on annual average'; *liánxù* 连续 'consecutively'), or other elements (*yuè lái yuè* 越来越 'more and more') expressing progress. All these features are well represented in (25). Overall, they present the state of affairs as an uncontroversially constant trend, which is likely to remain unchanged in the future.

- (25) *2000 nián~2010 nián shǒudū jīchǎng lǚkè tūntǔliàng niánjūn zēngzhǎng 13%, huòyóu tūntǔ liàngnián jūn zēngzhǎng 10.8%, qǐ jiàng jiàcì niánjūn zēngzhǎng 10.9%; 2012 Shǒudū jīchǎng lǚkè tūntǔliàng shǒucì tǔpò 8000 wàn, dádào 8192.9 wàn réncì, tūntǔliàng jǐncì yú Měiguó Yàtèlándà Hāzīfēi'ěrdé guójì jīchǎng de 8800 wàn réncì zuǒyòu, yǐ liánxù sān nián wěn jū shìjiè dì èr.*

2000 年~2010 年首都机场旅客吞吐量年均增长 13%，货邮吞吐量年均增长 10.8%，起降架次年均增长 10.9%；2012 首都机场旅客吞吐量首次突破 8000 万，达到 8192.9 万人次，吞吐量仅次于美国亚特兰大哈兹菲尔德国际机场的 8800 万人次左右，已连续三年稳居世界第二。

'From 2000 to 2010, the average annual passenger throughout of Capital Airport increased by 13%, cargo and mail throughput increased by 10.8%, and the number of take-offs and landings increased by 10.9%; in 2012, the passenger throughput of Capital Airport exceeded 80 million for the first time, reaching 81.929 million, second only to Atlanta Hartsfield International Airport in the United States with about 88 million passengers, ranking second in the world for three consecutive years'.

Indeed, future scenarios are addressed in Section 1.1.3 of the text (*Jiànshè de bìyàoxìng* 建设的必要性 'Necessity of the construction'). Here the narration takes two possible directions, depending on the new airport being completed or not. A representative extract for each scenario is reported in (26) and (27), respectively.

- (26) *Wèilái 10 nián, Běijīng de jīngjì hái jiāng yǐ 7% yǐshàng de zēngfú dàfú zēngzhǎng. Běijīng zuòwéi zhōngguó de shǒudū, jù yùcè, dào 2015 nián Běijīng dìqū hángkōng lǚkèliàng jiāng dádào 1.13 yì réncì/nián, rán'ér gēnjù mùqián Běijīng dìqū hángkōng yùnshū shìchǎng zhuàngkuàng fēnxī, Shǒudū jīchǎng hé Nányuán jīchǎng yóuyú shòudào zìshēn fāzhǎn guīmó hé wàijiè tiáojiàn de yuēsù, zǒngtǐ yùnnéng bùzú ér yòu nányí kuòchōng róngliàng.*

未来 10 年，北京的经济还将以 7% 以上的增幅大幅增长。北京作为中国的首都，据预测，到 2015 年北京地区航空旅客量将达到 1.13 亿人次/年，然而根据目前北京地区航空运输市场状况分析，首都机场和南苑机场由于受到自身发展规模和外界条件的约束，总体运能不足而又难以扩充容量。



'In the next 10 years, Beijing's economy will grow at a rate of more than 7%. As Beijing is the capital of China, it is predicted that by 2015, the number of air passengers in Beijing will reach 113 million per year. However, according to the current analysis of the air transport market in Beijing, the overall transport capacity of Capital Airport and Nanyuan Airport is insufficient and difficult to expand, due to the constraints posed by their own development scale and other external conditions'.

- (27) *Běijīng xīn jīchǎng de jiànshè, jiāng chèdǐ gǎibiàn gāi qūyù de chǎnyè bùjú, fāzhǎn gāoduān fúwùyè, gāoxīn jìshù chǎnyè, zhīshì jīngjì, xīnxī jīngjì děng, dōu jiāng chéngwéi kěnéng. Tā jiāng chéngwéi Běijīng nánbù dìqū jīngjì fāzhǎn de yǐnqíng, cùjìn Jīng Jīn Jì běi qūyù jīngjì de quánmiàn kuàisù fāzhǎn.*

北京新机场的建设,将彻底改变该区域的产业布局,发展高端服务业、高新技术产业、知识经济、信息经济等,都将成为可能。它将成为北京南部地区经济发展的引擎,促进京津冀北区域经济的全面快速发展。

'The construction of Beijing's new airport will completely change the industrial layout of the region, and it will become possible to develop high-end service industry, high-tech industry, knowledge economy, information economy, etc. It will become the engine of economic development in the southern area of Beijing and promote the comprehensive and rapid economic development of the northern Beijing-Tianjin-Hebei region'.

In (26), the issuers of the EIA describe the undesired future outcomes if the new airport is not built. As mentioned earlier, the current trend is not expected to vary, making it extremely difficult to manage the ever-increasing pressure on the existing facilities. Note that the estimates (*yùcè* 预测) are presented as highly factual by means of the adverb *jiāng* 将, expressing certainty that something will occur in the future (Lü 1999, 300). The same adverb is repeatedly used in (27); but in this case it expresses certainty over the benefits of the new airport. In sum, time is presented as a linear process in which past events had a clear influence on the present and make future predictions extremely reliable.

A similar pattern is found in sections 1.3 and 1.4 of the document, summarising the main contents and findings of the EIA process. Here, however, present-future opposition and high predictability are used to reassure that no negative consequence on the environment will take place. This is clear in example (5) above, where *bù huì* 不会 'will not' expresses a prediction that the occurrence of deadly risks is highly unlikely (see Arcodia, Basciano 2021, 250-1; see also § 4.4). The last function of linear time progression is to create a compelling narration of how thorough and detailed the preparations for the project have been. This is clear in section 1.1.2 of the document (*Qiánqí gōngzuò qíngkuàng* 前期工作情况 'Previous work'), an extract of which is reported in (28).

- (28) 2012 nián 10 yuè Guójiā fāzhǎn gǎigéwěi hé jūnwěi liánhé xiàng Guówùyuàn shàngbào “Yǒuguān jiànshè Běijīng xīn jīchǎng de qǐngshì bàogào”. 2012 nián 11 yuè Guówùyuàn bàngōnghuì huòdé tōngguò, 2012 nián 12 yuè Guówùyuàn xiàfā Guóhán 217 hào wén “Guówùyuàn, Zhōngyāng jūnwěi guānyú tóngyì jiànshè Běijīng xīn jīchǎng de pīfù”.

2012年10月国家发展改革委和军委联合向国务院上报“有关建设北京新机场的请示报告”。2012年11月国务院办公厅获得通过,2012年12月国务院下发国函217号文“国务院、中央军委关于同意建设北京新机场的批复”。

‘In October 2012, the National Development and Reform Commission and the Military Commission jointly submitted the “Report on the Construction of Beijing New Airport” to the State Council. In November 2012, the State Council’s executive meeting was approved, and in December 2012, the State Council issued Circular Guohan No. 217 “Reply of the State Council and the Central Military Commission on Approving the Construction of Beijing New Airport”’.

#### 4.6 Participants’ Role

Based on Halliday’s (2013) systemic functional model, this Section focuses on agency, i.e. the representation of participants as *Actors* or *Affected*.<sup>11</sup> In the document, the role of *Actor* is primarily played by aggregated masses, particularly institutions (e.g. *Guówùyuàn* 国务院 ‘State Council’), as well exemplified in (28). Inanimate entities (*běn xiàngmù* 本项目 ‘the present project’ in example 29) and nominalized processes (*jīchǎng de jiànshè* 机场的建设 ‘the construction of the airport’ and *línfēi chǎnyè de fāzhǎn* 临飞产业的发展 ‘the development of the airport industry’ in example 30) are also inserted in transitive constructions as *Actors*.

- (29) *Běn xiàngmù zài huánjìng yǐngxiǎng píngjià gōngzuò guòchéng zhōng dédào le [...] dàlì zhīchí.*

本项目在环境影响评价工作过程中得到了 [...] 大力支持。

‘The project obtained [...] strong support during the environmental impact assessment process’.

- (30) *Běijīng xīn jīchǎng de jiànshè, yǐngxiǎng de yuǎn bùzhǐ jīchǎng zìshēn héxīnqū de dìyù kōngjiān, línfēi chǎnyè de fāzhǎn xūyào zhōubiān guǎngkuò de fùdì.*

北京新机场的建设,影响的不止机场自身核心区的地域空间,临飞产业的发展需要周边广阔的腹地。

<sup>11</sup> This is a simplification of Halliday’s (2013) model, which distinguishes between material, mental, and verbal processes, each characterised by different types of participants. For example, the participants in mental processes are named the ‘Senser’ and the ‘Phenomenon’.

'The construction of the new Beijing airport affects far more than the geographical space of the airport's own core area. The development of the airport industry requires a vast hinterland around it'.

Particularly noteworthy is the frequent occurrence of ergative constructions, i.e. sentences "whose subject can be the object of the same verb in another form of the sentence" (Shei 2014, 120). In example (31), *wéixiǎn fèiwù* 危险废物 'hazardous waste' is the syntactic subject of the sentence; however, the process it undergoes is governed by unspecified agents, either human or mechanical. Conversely, in marked passive constructions the agent is typically an aggregated mass (*dānwèi* 单位 'unit', introduced by *yóu* 由; see Paternicò, Varriano, Tian 2021, 246).

- (31) *Gè lèi wéixiǎn fèiwù tōngguò línshí zhùcún shèshī shōují zhùcún, zuìzhōng yóu jùbèi wéixiǎn fèiwù chǔlǐ zīzhì de dānwèi ānquán chǔzhì.*

各类危险废物通过临时贮存设施收集贮存, 最终由具备危险废物处理资质的单位安全处置。

'All kinds of hazardous waste are collected and stored through temporary storage facilities; finally, they are disposed of safely by units with hazardous waste treatment qualifications'.

The population affected by the airport construction is also referred to metonymically by means of mass nouns (*gōngzhòng* 公众 'public'; *cūnzhuāng* 村庄 'village'). Note that the population is never depicted as taking an active role, even in cases when public participation is required by the authorities. This can be observed in example (3) in § 4.1, where human agents are erased and the process of distributing and receiving survey questionnaires is completely depersonalised. Lastly, more than human entities are almost completely omitted, with very few exceptions (see *shēngwùliàng* 'biomass' in example 1).

#### 4.7 Forms of Address

Forms of address reflect how the stakeholders are represented in a text. Interestingly, participants are never mentioned as individuals in the EIA; rather, the document makes a large use of mass nouns such as political institutions and companies. This is particularly evident in § 1.1.2 of the EIA, which reports a detailed list of organisations involved in project planning and authorisation. These include, just to mention some, *Guówùyyuàn bàngōnghuì* 国务院办公厅 'State Council Office' and *Guójiā fāzhǎn gǎigé wéi bàngōng tīng* 国家发展改革委员会办公厅 'General Office of the National Development and Reform Commission'. Again, as for technicalities, this conveys a sense of authority and trustworthiness of the decisions being made, while at the same time leaving out personal responsibility.

Particularly interesting is the frequent use of the term *wǒguó* 我国 'our country' (i.e. China), which occurs 5 times in the text (no less than 4 times in the opening paragraph) (32). It may serve to trigger a sense of national identity, invoking national pride and implying to the readers that they are obliged to support the project because it is in line with the development plan of the country and will make the country stronger, more competitive, and so on. In this context, identifying the country with the project needs may serve the purpose of strengthening top-down logics in development processes, by leveraging patriotism in an instrumental way.

- (32) *Gǎigé kāifàng yǐlái, wǒguó mínháng yùnsū yèwù chíxù kuàisù zēngzhǎng; yóuqí shì 2004 nián yǐhòu, wǒguó yí chéngwéi shìjiè shàng mínháng kè, huò, yóu yùnsū liàng zēngzhǎng lǚ zuìgāo de guójiā zhīyī. 2005 nián Zhōngguó mínháng yùnsū zǒngliàng yuèjū shìjiè dì'èr. Zài wǒguó mínháng yùnsū yèwù liàng dàfāzhǎn de xíngshì xià, quánguó gèdì jiàowéi pùbiàn de chūxiàn le jīchǎng róngliàng jǐnzhāng de zhuàngkuàng, Jīng Hù Sū sān dà rèdǎn dìqū hángkōng yùnsū shìchǎng xūqiú yǔ jīchǎng shèshī bǎozhàng nénglì zhījiān de máodùn tūxiǎn. Běijīng shì wǒguó de zhèngzhì, wénhuà zhōngxīn, tóngshí yě shì guójì jiāoliú zhōngxīn, shì shìjiè wénmíng gǔdōu hé xiàndàihuà guójiā chéngshì.*

改革开放以来,我国民航运输业务持续快速增长;尤其是2004年以后,我国已成为世界上民航客、货、邮运输量增长率最高的国家之一。2005年中国民航运输总量跃居世界第二。在我国民航运输业务量大发展的形势下,全国各地较为普遍地出现了机场容量紧张的状况,京沪穗三大热点地区航空运输市场需求与机场设施保障能力之间的矛盾凸显。北京是我国的政治、文化中心,同时也是国际交流中心,是世界闻名古都和现代化国际城市。

'Since the reform and opening up, our country's civil aviation transportation business has continued to grow rapidly; especially since 2004, our country has become one of the countries with the highest growth rates of civil aviation passenger, cargo, and mail transportation in the world. In 2005, the total volume of civil aviation transport in China was the second highest in the world. In the context of the great development of our country's civil aviation transport business, the situation of tight airport capacity has become more common throughout the country, and the contradiction between the demand of air transport market and the capacity of airport facilities in the three hotspots of Beijing, Shanghai and Guangzhou has become prominent. Beijing is the political and cultural centre of our country, as well as a centre of international exchange, a world-famous ancient capital and a modern international city'.

## 5 Discussion of Results

The purpose of an Environmental Impact Assessment should be that of laying the basis for an accurate, fair, and transparent evaluation of the impacts of a proposed project on nature and people. Its practice should be open to diverse outcomes. Yet what our analysis has found is an assemblage of linguistic and discursive patterns that marginalises any possible alternative, portraying further infrastructural expansion as desirable, inevitable, and bearing only negligible impacts on people and the environment. In Stibbe's terms (2021), the text is a rather typical example of four intertwined stories, which strengthen each other [fig. 1]. The first is a story of erasure: the text sidelines any legitimate concern about environmental and human health, as well as any preoccupation about changes in landscape. This is done by means of (I.1) abstraction, (I.2) technicalities, as well as (I.4) modality.

Besides erasure, other stories which clearly emerge here are narrations and convictions. The text is built on a linear narrative, whereas progress from a point A - unfit for the necessities and velocity of China's development - to a point B - whereas this backwardness has been successfully overcome - is the main argument, marginalising any alternative. Temporal markers (I.5), modality (I.4), and appraisal items (I.3) concur to this narrative, as well as to shape convictions employed to back this discourse. Finally, people and places are here represented and valued only insofar they adhere or do not constitute an obstacle to the proposed project, as made evident by findings across the indicators 'participants' role' (I.6) and 'forms of address' (I.7).

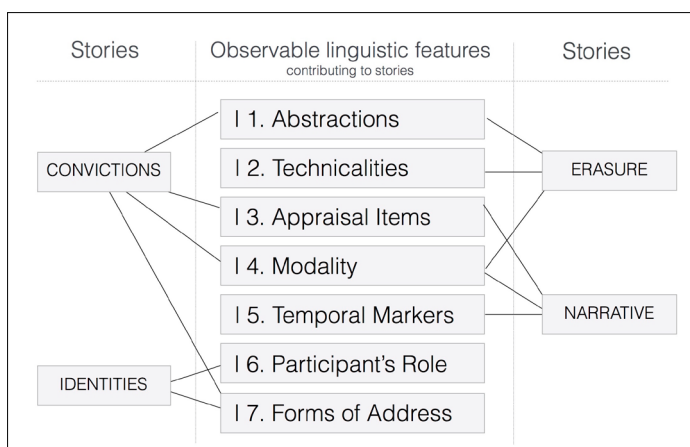


Figure 1 Visualisation of main findings across indicators, vis-à-vis Stibbe's (2021) stories

The vision transpiring from the text is hardly inspired by sustainability concerns. This is likely to have impacts on the way the entire decision-making and public consultation processes work, because it frames the EIA as subservient to a higher logic of good, i.e. of infra-structural expansion and development. In other terms, the language employed in the text normalises the objectives pursued by project proponents, as if they were the (only) natural thing to do.<sup>12</sup> While the document appears plain, objective, and consistent, in fact it pushes forward a politically laden vision of reality and future.

Such practices are widely documented also in other industrialised and industrialising contexts, including those traditionally more ready to embrace sustainability agendas (e.g. see Suopajärvi 2015). Yet it is likely that the long-standing habit of politicised language and the technocratic trait of Communist rule may amplify and expand the capacity of language and discourse to normalise thought and behaviour (Schoenals 1992; Greenhalgh 2008).

## 6 Conclusions

In a dramatic turn of event, soon after entering into operation the new Beijing airport proved to be quite redundant with existing infrastructures. Indeed, COVID-19 enormously disrupted air traffic, reducing it to a mere fraction of pre-pandemic levels (Zhang et al. 2020). While today traffic levels are foreseen to be soon back to 2019 levels, this remains a stark reminder of the distance between the narratives incorporated into decision-making, and social-ecological realities surrounding us, with their unpredictability. Language and discourse can play a big role in narrowing this gap, being truer to the world around us and to the diverse needs and desires of human and more than-human communities, as well as more respectful of places, which are not a just a blank shape on a map waiting to be developed and exploited (*kāifā* 开发), but rather shaped by interconnected webs of life.

Our work has meaningful implications for this broader mission, both in terms of research and practice. First, it shows the applicability of criteria employed by ecolinguistic research to investigate Chinese texts produced for the purpose of environmental planning and management. This opens the way to future, wider applications. Indeed, we are already employing the results introduced in this study to develop a more comprehensive Chinese Language Ecological Discourse Analysis framework, to be tested on a larger sample of texts.

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**12** On the process of normalisation of political goals in the field of sustainability (and on the use of the term 'natural' to describe them), see Brombal 2017.

Hopefully, the framework will be able to characterise different environmental discourses, based on the linguistic features and patterns they deploy (Brombal, Conti, Szeto, forthcoming). On a practical level, our work shows the importance of ecolinguistic analysis in unearthing discursive practices that curtail the space for innovation and alternatives in environmental decision-making. This issue must be addressed if human societies want to embark on the journey towards a genuine social-ecological regeneration. Ecolinguistics can assist us in doing that, by highlighting obsolete ideologies and providing the tools to shape novel, down-to-earth visions for a sustainable future.

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## Appendix 1. Full Text of the Document Used for This Analysis

### 1 前言

#### 1.1 项目背景

##### 1.1.1 建设背景

改革开放以来,我国民航运输业务持续快速增长;尤其是 2004 年以后,我国已成为世界上民航客、货、邮运输量增长率最高的国家之一。2005 年中国民航运输总量跃居世界第二。在我国民航运输业务量大发展的形势下,全国各地较为普遍地出现了机场容量紧张的状况,京沪穗三大热点地区航空运输市场需求与机场设施保障能力之间的矛盾凸显。北京是我国的政治、文化中心,同时也是国际交流中心,是世界闻名古都和现代化国际城市。近些年来,首都地区航空运输供需不平衡问题日益突出。

首都机场作为联通全国及世界各主要城市的复合型枢纽机场,截至 2011 年 12 月底,有 116 个国内通航点,106 个国际及地区通航点;2000 年~2010 年首都机场旅客吞吐量年均增长 13%,货邮吞吐量年均增长 10.8%,起降架次年均增长 10.9%;2012 首都机场旅客吞吐量首次突破 8000 万,达到 8192.9 万人次,吞吐量仅次于美国亚特兰大哈兹菲尔德国际机场的 8800 万人次左右,已连续三年稳居世界第二。首都机场目前的旅客吞吐量已经超过 7600 万人次/年的设计能力,达到饱和,航班时刻的增加受到严格控制,每天有大约 400 个航班申请不能满足。预计 2015 年和 2020 年北京地区的航空旅客吞吐量将分别达到约 1 亿和 1.4 亿人次,机场设施保障能力不足的矛盾十分突出。

目前,北京地区除有首都机场一座大型民用机场外,仅有一座飞行量有限(2011 年旅客量近 264.5 万人次,全国排名第 41 位)的军民合用机场——南苑机场,民用机场设施资源相对匮乏。为进一步提高北京地区航空与运输保障能力,缓解首都机场容量饱和的紧张局面,促进区域经济的平稳、快速发展,建设北京新机场已迫在眉睫。

##### 1.1.2 前期工作情况

北京新机场(原称北京第二机场)的选址工作始于 1993 年。北京市在编制《北京市城市总体规划(1994-2004 年)》时,为北京新机场规划了张家湾和庞各庄两个中型机场场址,并征得原民航总局同意。2003 年经国务院审议通过,国家发展改革委印发的首都机场扩建工程项目建议书批复文件(发改交运〔2003〕1078 号)明确提出:尽早组织专门力量开展第二机场的选址论证工作,力争在 2010 年开工,2015 年建成。

遵照国务院的要求,2008 年 3 月由国家发展改革委牵头,会同总参、民航局、空军、海军以及北京市、天津市、河北省政府等有关部门,成立了北京新机场选址工作协调小组,重新启动了机场选址工作,明确由民航局牵头组织相关专题研究和选址报告编制工作 2009 年 1 月 19 日,北京新机场选址工作协调小组第三次会议确定,以大兴场址作为北京新机场的推荐场址。

2010 年 3 月 10 日,国家发展改革委办公厅复函民航局综合司和北京市政

府办公厅,原则同意首都机场集团公司作为北京新机场建设项目法人,委托有资质的设计单位编制项目预可行性研究报告,按国家基本建设程序办理项目立项有关工作。

2012年3月1日,民航局、北京市和河北省政府向国务院、中央军委上报《关于建设北京新机场的请示》和该项目的《预可研报告》(中国民航机场建设集团公司编制)。2012年3月31日,国家发展改革委委托中国国际工程咨询公司对新机场项目进行立项评估。2012年4月,中国国际工程咨询公司召开了《北京新机场预可研报告》专家评审会,随后又进行了多次专题会议,对《北京新机场预可研报告》进行评审,于2012年9月向国家发展改革委提交评审报告。2012年10月国家发展改革委和军委联合向国务院上报“有关建设北京新机场的请示报告”。2012年11月国务院办公厅获得通过,2012年12月国务院下发国函217号文“国务院、中央军委关于同意建设北京新机场的批复”。

### 1.1.3 建设的必要性

#### (1)北京地区区域经济发展的必然选择

据统计,北京地区2000年至2009年GDP年均增长率为13%,同期民航业务量增长也达到了年均16%,约为1.25倍,若去除人为干预、限制的原因,其年均增长量也应在20%左右,约为同期GDP增速的1.5倍。未来10年,北京的经济还将以7%以上的增幅大幅增长。北京作为中国的首都,据预测,到2015年北京地区航空旅客量将达到1.13亿人次/年,然而根据目前北京地区航空运输市场状况分析,首都机场和南苑机场由于受到自身发展规模和外界条件的约束,总体运能不足而又难以扩充容量。北京迫切需要一个能足以承载未来航空需求的新机场,构建北京“一市多场”的长远格局。北京新机场的建设是必要的。

#### (2)是满足北京地区航空业务量快速发展的需要

随着首都机场航空业务量的快速增长,基础设施保障能力不足、航线和时刻资源紧张、航班延误等问题日益凸显。目前,首都机场空域保障能力已近极限,空中和地面运行压力极大,安全运行和航班正常性受到影响。航班时刻受到严格控制,据统计每天约有400个航班需求无法满足。根据预测,到2020年北京地区年航空运输市场需求将达到1.42亿人次,远远超出首都机场的保障能力。而首都机场受自身规模和周边环境的限制,总体运能不足又难以实施较大的扩容。因此,建设北京新机场是必要的。

#### (3)是保障北京地区民航事业发展“持续安全”的基础

目前,北京地区仅有首都机场一座大型民用机场,要满足北京地区民用航空运输的持续快速增长,日渐艰难。首都机场受地形和空域的限制,在管制上始终没有实现三条跑道独立进近。东部空域不打开,首都机场空中运行效率始终得不到充分的释放。流量控制始终困扰、束缚着首都机场的正常运行。为了保障飞行安全,民航局不得不采取限制航班量的行政干预手段。建设北京新

机场,北京地区终端区内所有飞机均由北京终端区统一指挥调度,这将有效缓解北京地区空中和地面运行的压力,飞行安全、运行安全都将得到保障。航班流的疏散,将使北京地区空中交通管制更加顺畅,危险接近和冲突告警将大大减少,流量控制的次数也将大大降低。

#### (4)是打造我国国际航空枢纽的需要

北京首都国际机场地处欧洲、亚洲及北美洲的核心节点上,有着得天独厚的地理位置、方便快捷的中转流程、紧密高效的协同合作,使其成为连接亚、欧、美三大航空市场最为便捷的航空枢纽。北京首都国际机场已成为世界最繁忙的机场之一,总计 94 家航空公司入驻首都机场运行,联通全世界 54 个国家和地区,包括国内通航点 126 个、国际通航点 110 个。北京首都机场虽然旅客吞吐量已跻身为世界第二大机场,但其国际中转量还不足,发展国际航空枢纽的空间也不足。北京新机场的建设,将使这一困局迎刃而解。北京地区航空运输市场“一市两场”的局面,将使北京作为东亚地区航空枢纽的国际竞争力大大增强。

#### (5)是北京建设世界城市的基础之一

北京已经成为世界 500 强最集中的城市之一,北京不仅集中了世界 500 强 80%的企业,而且其数量已经超过一些老牌世界市场,作为中国本土大公司最集中和中央财政金融所在城市,北京自然成为中国资本输出或本国跨国公司的中心。当前的首都机场,无论是生产运营规模,还是软硬件服务,都已步入世界空港的先进行列,具备了向大型国际枢纽机场迈进的内部条件和保障能力,为打造北京世界城市奠定了良好的航空口岸基础。另一方面,目前首都地区机场空域、地面起降设施、外部交通都过于集中,这也在一定程度上限制了首都地区航空业务量的发展空间。随着旅客吞吐量的快速攀升,机场安全运行的压力越来越大。北京地区建设另一个大型机场是必要的,也是合理的,它符合北京建设世界城市的需求,也为北京建设世界城市奠定了基础。

#### (6)促进京津冀北区域经济的发展

北京新机场的建设,影响的远不止机场自身核心区的地域空间,临飞产业的发展需要周边广阔的腹地。北京地区土地资源有限,机场北部和西部地区北京市已有规划,是北京未来城市发展的重要地区之一。河北廊坊市所辖市县位于机场东部和南部,将为北京新机场的临飞产业布局,可提供最为广阔的腹地,临飞产业发展大有可为。北京新机场的建设,将彻底改变该区域的产业布局,发展高端服务业、高新技术产业、知识经济、信息经济等,都将成为可能。它将成为北京南部地区经济发展的引擎,促进京津冀北区域经济的全面快速发展。

#### (7)是京津冀区域综合交通运输体系的完善

北京新机场的建立正好处于京津石大三角的中心地带,新机场场址距离北京首都机场约 67km,距离天津机场约 85km,距离石家庄机场约 280km。从空间上正好填补了大三角的空白,不但可以作为北京的新机场,也可为天津滨

海机场提供便利的备降服务,还可以弥补河北北部没有大型机场的缺憾,服务于河北廊坊、保定地区,促进该地区国民经济和航空业务的发展。对京津冀三地民用航空事业的发展,起到了很好的促进作用,使航空运输体系更加完善。

#### 1.1.4 北京现有机场设施及运营情况

##### (1)首都机场

首都国际机场始建于 1954 年,位于北京市东北方向,距天安门广场直线距离约 25km,终期规划占地面积约 47km<sup>2</sup>,现有主要设施包括:3 条南北向的远距平行跑道以及相应的滑行道系统,构成东、中、西 3 个飞行区,西跑道 3200m×50m(E 类)、中跑道 3800 m×60 m(F 类)、东跑道 3800 m×60m(F类),跑道两侧道肩宽度均为 7.5m,可满足各类飞机的运行要求;3 座航站楼的总建筑面积为 139.4 万 m<sup>2</sup>(T1、T2、T3 航站楼分别为 8 万、33.4 万和 98 万 m<sup>2</sup>);各类站坪机位 313 个(近机位 131 个、远机位 182 个);以及空管、供油、供电、供水、消防、安全防范等配套设施。首都机场 2011 年旅客吞吐量 7867 万人次,货邮吞吐量 164 万吨,飞机起降 53.5 万架次。

##### (2)南苑机场

南苑机场现有一条 3200m×50m 的水泥混凝土跑道和 3019m×20m 的平行滑行道,跑滑间的平地区宽 185 m,有 12 条联络滑行道,7 块停机坪。2011 年实现旅客吞吐量 254 万人次,货邮吞吐量 2.36 万吨,民航飞机起降量 2.13 万架次。

### 1.2 环境影响评价工作过程

#### (1)准备阶段

2014 年 2 月,北京新机场建设指挥部正式委托国寰公司承担了北京新机场项目环境影响评价工作。在进一步研究了新机场项目可行性研究报告等技术文件和其他有关文件后,项目组开展了初步的工程分析,并在前期环境咨询成果的基础上,进一步分析当地环境质量状况和存在的问题。同时,在该阶段开展了第一次公众参与工作。

#### (2)分析论证和预测评价阶段

根据调查、收集到的有关文件、资料,利用计算机模型、类比等手段,对各环境要素进行了预测、分析及评价。在该阶段,针对预测的基础数据、参数等,与建设单位、地方政府部门及其它相关单位进行了多次的研究、沟通及交流。

#### (3)编制环境影响报告书

整理各要素预测成果,编制环境影响报告书。在该阶段,对报告书中的重点内容,如声环境影响预测等专题成果,邀请了有关专家进行研讨咨询。同时,在该阶段开展了第二次公众参与工作。

本项目在环境影响评价工作过程中得到了环境保护部、环境保护部环境工程评估中心、北京市环境保护局、河北省环境保护厅、大兴区环境保护局、廊坊市环境保护局等各级环保部门的关心和指导,得到了北京市机场办、河北省机场办、大兴区机场办、廊坊市机场办、大兴区礼贤镇、榆垓镇、安定镇、庞各庄镇、魏善庄镇、廊坊市广阳区、安次区、固安县、永清县等各级地方政府部门的大力支持,也得到了北京新机场建设指挥部、华北空管局、中国航空油料集团第一项目部建设单位的大力协调与通力合作,同时有中国民航机场建设集团公司等设计单位的技术协助,此外,环境保护部环境发展中心给予了高度重视和关注,本项目的技术协作单位也给予了积极的支持与配合,在此一并表示感谢。

### 1.3 项目主要环境问题

#### (1) 声环境影响

场址区周围现状以农村环境为主,背景噪声较低,新机场建成运营后,目标年飞机飞行架次将达到62.8万架次,周围区域受飞机运行噪声、交通噪声、社会活动噪声的影响增大,区域声环境质量会发生显著变化。

#### (2) 涉及饮用水源保护区

新机场占地涉及廊坊市大古营水源地,共有水源井18眼,井深为350m,取水层为第Ⅲ含水组。其中9眼水源井在新机场的建设范围内,另外部分水源井井间联络管及输水干管也在机场占地范围内,机场的建设将会对大古营水源地的正常供水造成影响,需采取搬迁措施。

#### (3) 环境空气影响

京津冀地区环境空气质量问题备受社会关注,区域大气污染从“煤烟型”向锅炉废气、二次扬尘、VOC、机动车尾气的混合型、多元化污染转变。新机场建成后飞机尾气、汽车尾气以及场内其他污染源的废气排放对区域环境空气质量造成的影响程度,也是本项目的最主要环境问题之一。

### 1.4 报告书主要结论

#### (1) 声环境影响

本项目声环境影响主要来自于飞机噪声。根据预测,近期目标年飞机噪声(WCEPNL)超过80分贝的村庄有9个,75~80分贝范围内的村庄分别有24个;超过70分贝的学校有23所,其中有7所超过75分贝;有1个卫生院超过75dB。

## (2)环境空气

本项目环境空气影响主要来自于飞机尾气,污染因子主要为  $\text{SO}_2$ 、 $\text{CO}$ 、非甲烷总烃、 $\text{NO}_2$ 、 $\text{VOC}$  和颗粒物等。根据预测,二氧化氮、 $\text{PM}_{10}$ 、 $\text{PM}_{2.5}$  最大日均浓度预测值出现超标。超标原因主要是由于当地的背景值已经超过国家标准,机场项目的废气排放对当地的二氧化氮、 $\text{PM}_{10}$ 、 $\text{PM}_{2.5}$  的贡献值较低。

## (3)生态

本项目施工期将导致 3052.42hm<sup>2</sup> 的土地变为机场建设用地。项目占用耕地和基本农田,对当地农业生产产生一定影响。机场建设将造成 6.8 万 t 的植物生物量损失。可能造成的水土流失总量共计 439029.14t,新增水土流失总量403890.35t。

## (4)地表水环境

机场场内各污水单元产生的污废水集中收集后,由污水管网进入场内集中式污水处理厂处理,污水处理厂采用的“兼氧-MBR”工艺,出水经过人工河道湿地进一步净化后水质满足回用标准要求,一部分回用于冲厕、绿化及道路洒水,剩余部分进入场内生态水系,最后不定期的排入天堂河。由于排水水质已具备景观水功能,因此将不会对天堂河及其下游的永定河水质造成负面影响。

## (5)地下水环境

机场建设及天堂河改道对区域地下水流场和水位的总体影响不大。廊坊市白家务水源地地下水开采层位主要为第三含水层组,与其上伏含水层水力联系很弱,机场建设与运营对其水量、水质影响很小。由于机场建设占用水源地部分水源井及其供水供电线路,对水源地供水造成较大影响,水源地需关闭并选址另建。

## (6)固体废物

机场航空垃圾、生活垃圾等通过垃圾中转站收集分拣后依托北京市市政垃圾处理设施进行妥善处置,各类危险废物通过临时贮存设施收集贮存,最终由具备危险废物处理资质的单位安全处置。

## (7)电磁环境影响

本项目雷达场站、导航台站等电磁辐射设备对周边环境产生的电磁辐射强度最高为 0.04W/m<sup>2</sup>,低于公众照射管理限值(0.2W/m<sup>2</sup>),电磁环境影响可以接受。

## (8)环境风险评价

项目航空煤油储罐区为重大危险源,储油罐发生火灾、爆炸事故条件下, $\text{SO}_2$

、CO 扩散范围内未出现半致死浓度区域,不会出现人的伤亡。所产生的环境风险值小于同行业的化工风险值  $8.33 \times 10^{-5}$ ,属可接受水平。

#### (9) 公众参与

本次公众参与采取了环境信息公告、发放公众调查表、座谈会等方式,调查公众意见。共发放个人调查表 8000 份,回收有效表格 7956 份,回收率为 99.4%。调查结果显示 99.1% 的个人调查者以及 99.8% 的调查团体表示支持本项目建设。

## Appendix 2. Linguistic Indicators Identified by Literature Review

Indicator	Story
Relationship between clauses	Ideology
Genres	Ideology
Grammatical structures	Ideology
Assumptions & predispositions	Ideology
How events are represented	Ideology
Figures of speech	Ideology
Intertextuality	Ideology
Transitivity	Ideology, erasure
Trigger words	Frames
Appraisal items	Evaluations
Modality	Convictions
Call to experts	Convictions
Appositions	Convictions
Quantifiers	Convictions
Hedges	Convictions
Metaphor	Convictions
Presuppositions	Convictions
Given-new structure	Convictions
Abstraction	Erasure
Nominalizations	Erasure
Passives	Erasure
Technicalities	Erasure
Metonymy & hyponyms	Erasure
Anthropomorphization	Erasure
Group identity	Identity