Modeling prohibition: A case study on Mandarin *jinzhi*

Intro. Structural causal models (SCMs; Pearl 2000, 2009) have recently gained prominence in the analysis of natural language causation, offering substantial explanatory power (e.g. Nadathur 2019; Nadathur&Lauer 2020; Copley 2024; Baglini&Bar-Asher Siegal 2025). While SCMs successfully capture core aspects of causal reasoning—such as causal necessity vs. sufficiency—their linguistic adequacy remains an open question (Luo 2024). This study argues the technical enrichments of causal model are required by the Mandarin "anti-actuality-entailment" (anti-AE) verb *jinzhi* 'prohibit'.

Data Mandarin exhibits an "anti-AE" construction with the verb *jinzhi* 'prohibit', in which the prohibitor may be either animate or inanimate, while the prohibitee—overt or implicit—must be animate (1). When the prohibitor is animate, it must additionally outrank the prohibitee in the relevant social hierarchy. Consistent with previous work (e.g. Alxatib 2016, 2019; Copley&Mari 2022; Privoznov 2023), *jinzhi* does not entail the non-actualization of the embedded eventuality. Finally, the prohibitive meaning contributed by *jinzhi* is inherently generic, in line with classic observations on genericity (e.g. Kamp 1973).

(1) *Guīdìng / lǎoshī jìnzhǐ (xuéshēng) zài túshūguǎn xuānhuá.*
regulations / teacher prohibit student at library make-noise
'Regulations/The teacher prohibit(s) (students from) making noise at the library.'

Previous account Copley&Mari (2022) identify inhibition as the central causal notion underlying prohibitive predicates and formalize it as a distinct type of causal influence, implemented via inhibitory arrow functions in a SCM. Within this architecture, several properties of prohibition follow as systematic consequences of the same causal configuration: **(i.)** stativity (cf. genericity in this study) arises from the fact that inhibitory influence does not require energetic or eventive input; **(ii.)** compatibility with inanimate prohibiters follows from the possibility of stative causal sources; **(iii.)** defeasibility reflects the non-guaranteeing nature of blocking influence in the presence of competing causal factors; and **(iv.)** authority is encoded structurally, insofar as a participant's intention figures as a causal parent of the prohibited outcome. The Mandarin *jinzhi* data are fully compatible with this inhibitory analysis, but intuitively they show that these properties interact with distinct linguistic dimensions in ways that call for making these interactions explicit in the causal representation.

An event-based SCM analysis Following Luo (2025), we adopt an event-based structural causal model in which causation is represented over structured event variables rather than propositions. In this framework, Mandarin *jinzhi* contributes a *stative inhibitory* causal influence (Copley&Mari 2022), whose effect on event realization is determined by its interaction with other independently available factors.

Formally, we assume a structural causal model $\mathcal{M} = \langle \mathcal{U}, \mathcal{V}, \mathcal{F} \rangle$, where $\mathcal{U}$ is a set of background variables, $\mathcal{V}$ a set of endogenous variables, $\mathcal{F}$ a set of structural equations, and the relevant endogenous variables are event variables. Each event variable e minimally encodes temporal information, participant roles, and a realization-related component. The core event variables are: e_{PROH}, a standing prohibitive event/state introduced by *jinzhi*; e_P, the prohibited eventuality; an agentive intention or attempt event by the prohibitee *directed toward the realization of the prohibited event*; and U_P, background enabling conditions, including but not limited to enforcement mechanisms and social-hierarchical relations.

The realization of the prohibited event e_P is determined by a structural equation of the following form:

$$e_P := f_P\big(e_{\text{PROH}},\, e_{\text{AG-int}},\, U_P\big),$$

where the lexical contribution of *jinzhi* to f_P is an *inhibitory* component. Intuitively, the core realization of e_P is computed as:

$$core(e_P) = \begin{cases} 0 & \text{if } core(e_{\text{PROH}}) = 1 \text{ and } e_{\text{AG-int}} \text{ is absent or weak,} \\ 1 & \text{if } core(e_{\text{AG-int}}) = 1 \text{ and } U_P \text{ supports override,} \\ \text{determined by } U_P & \text{otherwise.} \end{cases}$$