Jackson Petty, May 2025
Department of Linguistics, New York University

THE ASPECT OF *tse-* IN YIDDISH

"אַ קלוגער פֿאַרשטייט פֿון איין וואָרט צוויי"

"A wise man hears one word and understands two."

Nahum Stutchkoff, *The Treasury of the Yiddish Language*

This document was typeset with LuaLaTeX. Serif text is set in Cochineal. Sans-serif text is set in Heliotrope. Monospace text is set in Berkeley Mono.

The Aspect of tse- *in Yiddish*

The Aspect of *tse-* in Yiddish

Jackson Petty

May 2025

Committee: Prerna Nadathur (chair), Isaac Bleaman, Chris Barker
Subfield: Semantics
Defense: 4:00PM, 23 May 2025

Contents

1 Introduction

Yiddish possesses a class of 'inseparable' verbal prefixes which augment the meaning of the verbs they attach to. Among these prefixes is *tse-*, which has been described as conveying a variety of separate meanings: spatial dispersion, perfective aspect, and initial action. Here, I argue that the latter two of these meanings can be accounted for by a single analysis, wherein *tse-* functions as a CAUSE-BECOME operator. When combined with atelic predicates, it transforms the underlying event into one that is inchoative: initial and with minimal temporal extension. When combined with telic predicates, the underlying event becomes completative: final, but likewise with minimal temporal extension. I provide a formal analysis of this description in the framework of Neo-Davidsonian event semantics, and show how this account unifies the spatial, perfective, and 'initial' readings treated as separate in previous descriptions. I also discuss the partial coöccurence of *tse-* with the reflexive pronoun *zikh* 'self'; though treated as obligatory in previous descriptions, I show that there are cases when *tse-*prefixed verbs need not take *zikh* 'self' as an object. I then provide an account for why *zikh* 'self' does at times coöccur with *tse-* by appealing to the connection between anticausitivization and reflexivization developed in Koontz-Garboden (2009), and discuss how the qualities of a verbal predicate's event and argument structure determine whether the reflexive marker is obligatory. I end by considering the prospect of extending the analysis given here to cover the rest of the inseparable verbal prefixes to provide a unified account of synthetic aspect marking in Yiddish and discuss the questions this analysis opens about how *tse-*prefixed causative and inchoative/completive forms interact with related constructions in Yiddish.

2 Background

I briefly discuss the requisite background for the investigation, including a description of the Yiddish language, Aspect, previous descriptions of *tse-* in literature, and an explication on the debate over whether Yiddish possesses an overly-marked aspectual contrast.

2.1 Yiddish

Yiddish is a language spoken by the Ashkenazi Jewish diaspora. It is most typically described as a Germanic language, diverging from Middle-High German sometime around 1000 A.D., with significant substrate influence from Semitic (most notably Mishnaic Hebrew and Aramaic), Romance, and Slavic languages (see, *inter alia*, Jacobs (2005: Ch. 2) for a discussion of the competing views on Yiddish origins and classification). Today, Yiddish is spoken as a native language primarily by Charedi Jews, with the largest loci of speakers being New York and Israel Fishman (2011). Estimates place the current number of native speakers at around 650,000, a marked decrease from its zenith in the early 20th century at around 10–13 million native speakers (Avineri 2014, Benedict 2022); this decline was driven primarily by the Shoah and secondarily by pressures of linguistic and cultural assimilation whereby Yiddish speakers adopted vernaculars of English, Hebrew, German, Russian, and other languages (Jacobs 2005). At present, the future of Yiddish is contested: while the pressures of linguistic assimilation have not abated, neither has the use of Yiddish as a daily language among Charedi speakers. Jacobs (2005) notes that the number of native Yiddish speakers has increased in the 21st century, with the largest increase occurring among younger speakers (Avineri 2014).

2.2 Aspect

Aspect refers to the internal and relative temporal logic of situations (Comrie 1976). It is dichotomized into two forms: *viewpoint* aspect (also called *grammatical* or *outer* aspect), which locates events relative to a particular reference time and conveys their relation to one another; and *Aktionsart* (also called *situation*, *lexical*, or *inner* aspect; or *aspectual class*), which characterizes the inherent temporal properties of events themselves (see, *inter alia*, Klein 1994). Viewpoint aspect concerns the distinctions of the relative ordering (1) and containment (2) of event times E and reference times R:

(1) a. At 5PM, I had danced. [Perfect, $E < R$]

b. At 5PM, I danced. [Non-Perfect, $R = E$]

(2) a. At 5PM, I danced [Perfective, $E \subseteq R$]

b. At 5PM, I was dancing [Imperfective, $R \subseteq E$]

Aktionsart, by contrast, qualify inherent temporal properties of verbal predicates, such as their telicity (3a), and durativity (3b).

(3) a. I drank a beer ~ I drank [Telicity]

b. I ran ~ I arrived [Durativity]

2.3 Previous descriptions of *tse-*

The *tse-* prefix in Yiddish has been previously described in literature as one which contributes spatial or affective meaning to the verbs it attaches to. Katz (1987: p. 144) reports the meaning of *tse-* as 'coming apart; spreading out; in all directions; the spacing out of an action; the total undoing of something.' Beinfeld & Bochner (2013: p. 579) define this sense of *tse-* as expressing 'separation, disintegration, or intensification.' Harkavy (1925: p. 430) describes it as 'a syllable prefixed to verbs signify[ing] separation or intensity of action.' This sense is illustrated in (4).

(4) *gebn* 'to give' ~ *tse-gebn* 'to give out'

In addition to the characterization of *tse-* as contributing spatial information or intensifying an action, there are two complementary descriptions of *tse-* in the literature which propose it can contribute something like aspectual information. First, *tse-* has been variously described as a perfective marker, contributing a particular viewpoint aspect (Weinreich 1968, Aronson 1985, Gold 1999). Aronson (1985) surveys Weinreich (1968)'s Yiddish-English dictionary to compile a count list (5) of instances in which various verbal prefixes are used as perfective markers.

(5)

Separable				*inseparable*	
oys-	64	*avek-*	4	*far-*	31
op-	40	*durkh-*	4	***tse-***	18
on-	31	*tsunoyf-*	2	*ba-*	7
tsu-	20	*unter-*	1	*der-*	2
ayn-	18	*arop-*	1	*ant-*	1
oyf-	11	*arum-*	1		
iber-	7	*arayn-*	1		

In Weinreich (1968)'s data, *tse-* is the second-most frequently used inseparable prefix which contributes perfective meaning, accounting for patterns like the following:

(6) a. *shedikn* 'to damage, to hurt (impf.)' ~ *tse-shedikn* 'to damage (perf)'

b. *shisn* 'to shoot (with a gun)' ~ *tse-shisn* 'to shoot up/dead'

(Beinfeld & Bochner 2013)

Here, the suffixation of *tse-* adds a sense of completion to the underlying action. Gold (1999) goes on to provide an analysis of the four most common perfective prefixes (*oys-*, *op-*, *on-*, and *far-*), but does not provide any further analysis for *tse-*.

Second, *tse-* is also described as expressing an initiation of an action. Schächter (1951) notes that this 'ingressive' use of *tse-* is very productive, citing three examples of its use in this sense. Jacobs (2005: p. 222) notes in a subsection on verbal aspect that *tse-* + verb + *zikh* 'self' can express the sudden commencement of an action. Beinfeld & Bochner (2013: p. 579) similarly describe the construction *tse-* + verb + *zikh* 'self' as meaning 'to start to verb,' although they say that this construction is limited to verbs which express emotion. Common to the descriptions provided by Jacobs (2005) and Beinfeld & Bochner (2013) is the stipulation that the *tse-*prefixed construction contain the reflexive anaphor *zikh* 'self'; Schächter (1951) does not make this claim overtly, but the three examples he brings for the ingressive use of *tse-* use *zikh* 'self' as well.

2.4 Aspect in Yiddish

The argument advanced here presumes, to some extent, that aspect in Yiddish is a morphologically-marked contrast. Although the previously-presented description of Yiddish as having perfective markers would seem dispositive in favor of Yiddish having grammatically-marked aspect this claim has been the matter of some contention in the literature. Proponents of this view, advanced by Weinreich (1968), point to the presence of morphemes which condition the interpretation of verbal predicates; such a view is often supported by appeal to the influence of language contact speakers of Yiddish and those of Slavic languages, which robustly show morphological aspect marking. Gold (1999) surveys Binnick's (1991) list of perfectivizing prefixes to establish a general correspondence between the use of such prefixes in Slavic languages and the use of the prefixes which Weinreich (1968) identifies in Yiddish. Talmy (2003: ch. 4, §§3–4) goes further, drawing specific correspondence between the Yiddish *tse-* and the Slavic *raz-* on the basis of their shared uses indicating spatial dispersion (7) and perfective aspect (8).

(7) a. *dut'* 'to blow' ~ *raz-dut'* 'to puff out (as, one's cheeks)' [Russian]
b. *gebn* 'to give' ~ *tse-gebn* 'to give out' [Yiddish]

(8) a. *rezat'* 'to cut' ~ *raz-rezat'* 'to cut through (perf.)' [Russian]
b. *shnaydn* 'to cut' ~ *tse-shnaydn* 'to cut into (perf.)' [Yiddish]

This robust use of verbal prefixation in Yiddish to contribute both spatial and aspectual meaning to verbal predicates differs from the use of verbal prefixes in German. While the etymologically-coordinate prefix *zer-* does convey a meaning which is *prima facie* similar (typically translated as 'asunder' or 'destruction', cognate to the Latinate English prefix *dis-*, as in *dissolve*), Talmy (2003: p. 300) notes that the distribution of particular spatial connotations differs between German on one hand (where the preponderance of cases use *zer-* to mean 'destruction', and only infrequently to mean 'outwards') and Yiddish and Russian on the other, where the pattern is reversed. On the matter of aspectual use, German is uncontroversially described as having no marked aspectual distinction (see, *inter alia*, Dahl 1985: p. 167); correspondingly, *zer-* does not contribute any aspectual information in contradistinction to the Yiddish (and Slavic) examples in (8).

Opponents of the notion that Yiddish possesses aspectual contrast raise a number of points of contention. Aronson (1985) argues that the unpredictability of *which* perfectivizing prefix verbs take, the ability of an unprefixed verb to take more than one unique prefix, and the lack of unprefixed-prefixed pairs minimally demonstrating an imperfective-perfective contrast favor a lexical analysis of Yiddish aspect rather than a grammatical one.[1] Rothstein

1. It is unclear whether Aronson (1985) intends for his use of *grammatical* and *lexical* as qualifiers of aspect to refer to the distinction between

(1990: p. 145) argues that verbal prefixation in Yiddish does not mark perfectivity, but instead considers verbal prefixes to make atelic verbs telic (eg, that verbal prefixes may affect a predicate's *Aktionsart* but not its viewpoint aspect).

The analysis presented here more naturally accords with the first position that Yiddish does display a marked aspectual contrast, similar to Slavic and in contradistinction to German, though the scope of this claim is somewhat narrower than the general debate. Specifically, I argue that Yiddish *tse*-prefixiation (and more generally, inseparable verbal prefixation) does mark a contrast in dimensions of *inner* aspect (i.e., *Aktionsart*), though the exact realization of this markedness is subject to lexical considerations. Consequently, the imperfective-perfective alternation observed above need not necessarily be seen as evidence of grammatical viewpoint aspect, but rather can be understood as an induction from the contrast of related *Aktionsarten*.

between *viewpoint* and *Aktionsart*, which are sometimes called *grammatical* and *lexical* aspect, respectively. He uses the term 'aspect' broadly and distinguishes *lexical* from *grammatical* aspect on the basis of whether these temporal properties are inherently associated with a particular lexical form (e.g., *eat* ~ *consume* or *eat* ~ *eat up* in English) or whether they come in paradigmatic forms (e.g., the French *passé compose* ~ *imparfait*). Aronson (1985) takes the Slavic perfective-imperfective paradigm as a prototypical case of grammatical aspect, indicating that he considers viewpoint aspect as something which can be either lexical or grammatical. He does not discuss telicity or other properties of *Aktionsart* class distinction, though he does include an uncited reference to Vendler (1957) in the bibliography, which established such distinctions.

3 Data

To establish the role that *tse-* plays in the Yiddish verbal system, I present below a collection of *tse-*prefixed verbs along with their closest unprefixed predicate (either the verb to which *tse-* combines or an adjective from which the prefixed verb can be derived). I begin in (9–11) below by categorizing cases by the *aktionsart* of the eventuality of the base form. These cases are taken from dictionary and corpus data (primarily Harkavy (1925) and Beinfeld & Bochner (2013)), with some readings being checked by a language consultant.

In some cases, *tse-* can combine with stative verbs or adjectives (that is, eventualities which are durative but non-dynamic and atelic), as in (9) below.

(9) **States** [atelic, non-dynamic, durative]

a. *beyzern zikh* 'to be angry' ~ *tse-beyzern* 'to provoke, to make angry'
~ *tse-beyzern zikh* 'to get angry'

b. *glien* 'to glow' ~ *tse-glien* 'to make white-hot'
~ *tse-glien zikh* 'to catch fire'

c. *vatren* 'generosity' ~ *tse-vatrenen zikh* 'to become generous'

d. *nishtn* 'nothingness' ~ *tse-nishtern* 'to annihilate'

e. *yushen* 'to flow (of blood); to bleed' ~ *tse-yushen* 'to make bleed'
~ *tse-yushen zikh* 'to go wild'

tse- can also combine with activities (eventualities which are durative, dynamic, and atelic) as in (10) below.

(10) **Activities** [atelic, dynamic, durative]

a. *biln* 'to bark' ~ *tse-biln zikh* 'to start barking'

b. *butsken zikh* 'to jostle one another' ~ *tse-butsken zikh* 'to bump into'

c. *blien* 'to bloom, flourish' ~ *tse-blien zikh* 'to blossom'

d. *brenen* 'to burn (intr.)' ~ *tse-brenen zikh* 'to catch fire'

e. *blitsn* 'to flash' ~ *tse-blitsn zikh* 'to start to flash'

f. *vign* 'to swing (trans.)' ~ *tse-vign* 'to set swinging (trans.)'
vign zikh 'to sway (intr.)' ~ *tse-vign zikh* 'to get into full swing, to perk up' ,

g. *veynen* 'to cry, weep' ~ *tse-veynen zikh* 'to get into a fit of crying'

h. *zharen* 'to burn (trans.)'
zharen zikh 'to smolder, glow (intr.)' ~ *tse-zharen zikh* 'to begin to flame'

i. *tantsn* 'to dance' ~ *tse-tantsn zikh* 'to break into dance'

j. *yakhmern* 'to yell' ~ *tse-yakhmern zikh* 'to get excited'

k. *khlipen* 'to sob' ~ *tse-khlipen zikh* 'to get into a fit of sobbing'

l. *lakhn* 'to laugh' ~ *tse-lakhn zikh* 'to burst out laughing'

m. *mishn* 'to mix (trans.)' ~ *tse-mishn* 'to confuse'
mishn zikh 'to interfere' ~ *tse-mishn zikh* 'to get confused' ,

n. *fayern* 'to rant' ~ *tse-fayern zikh* 'to lose one's temper'

o. *ploydern* 'to chat, babble' ~ *tse-ploydern* 'to disclose'
~ *tse-ploydern zikh* 'to settle down to chat'

p. *klogn* 'to weep' ~ *tse-klogn zikh* 'to burst into tears, to start moaning'

q. *redn* 'to speak' ~ *tse-redn zikh* 'to launch into a conversation'

r. *shoklen* 'to shake (trans.)' ~ *tse-shoklen* 'to shake (trans.)'
shoklen zikh 'to shake (intr.)' ~ *tse-shoklen zikh* 'to start to sway'

s. *shpiln zikh* 'to amuse oneself' ~ *tse-shpiln zikh* 'to start acting up'

In some cases, *tse-* is found to combine with achievement eventualities (telic, dynamic, and nondurative) as in (11) below.

(11) **Achievements** [telic, dynamic, non-durative]

a. *bayln* 'to bruise' ~ *tse-bayln* 'to bruise (perf.), to cover up with bruises'
~ *tse-bayln zikh* 'to get bruised up' ,

b. *brekhen* 'to break (trans.)' ~ *tse-brekhen* 'to shatter (trans.)'

c. *breklen* 'to crumble (trans.)' ~ *tse-breklen* 'to crumble up (trans.)'

d. *zetsn* 'to seat (imperf.)' ~ *tse-zetsn* 'to show each to their seat'
~ *tse-zetsn zikh* 'to take one's seat'

e. *shisn* 'to shoot (with a gun)' ~ *tse-shisn* 'to shoot up/dead'

f. *shedikn* 'to damage, to hurt (impf.)' ~ *tse-shedikn* 'to damage (perf)'

4 Analysis

I begin in section 4.1 by noting some descriptive generalizations of the data presented in the previous section and discuss how these motivate revision of previous analysis given for *tse-* and the *tse*-verb + *zikh* 'self' construction. I then present in section 4.2 a formal analysis of *tse-* to account for these descriptive analyses.

4.1 Descriptive Generalizations

The first qualitative point to note is the effect that *tse*-prefixation has on the temporal qualities of the predicates the prefix attaches to. In general, the prefixed forms convey transitions into or out of the underlying predicate which are minimally extended in time. In some cases, the prefix form denotes an instantaneous beginning to its durative, unprefixed counterpart, as in (10a) *biln* 'to bark' ~ *tse-biln zikh* 'to start barking'; in these cases, we may regard the prefixed form as an *ingressive* variant of the unprefixed form. In other cases, particularly those whose underlying predicate is telic, the prefixed form may have the minimally-extended duration required to effect the predicate's truth conditions, as in (11c) *breklen* 'to crumble (trans.)' ~ *tse-breklen* 'to crumble up (trans.)'. Here, the reading tends to be *completive*, rather than ingressive; these cases seem to correspond well with the previous descriptions of *tse-* as a perfective marker.

Closely related is the correspondence between the morphological gradation of bare verbs, *tse*-prefixed verbs, and *tse*-prefixed verbs taking *zikh* 'self' as a direct object; and the semantic gradation between base predicates, causative predicates, and transitional predicates. This correspondence is most clearly highlighted in cases where all three forms appear with a single base form, as in the case with (9b):

(12) a. *glien* 'to glow' BASE
b. *tse-glien* 'to make white-hot (e.g., to cause to become glowing)' CAUSATIVE
c. *tse-glien zikh* 'to catch fire (e.g., to become glowing)' INCHOATIVE

In cases when the underlying predicate is telic, as in the case for (11a), a similar pattern is found, where the presence of *zikh* reflects an alternation between causative and completive predicates:

(13) a. *bayln* 'to bruise' BASE
b. *tse-bayln* 'to bruise (perf.), to cover up with bruises' CAUSATIVE
c. *tse-bayln zikh* 'to get bruised up' COMPLETIVE

This correspondence reflects the pattern of *anticausitivization* found in languages like Spanish and O'odham, wherein inchoative verbs are morphologically derived from causative ones through a process of reflexivization (Koontz-Garboden 2009). The appearance of this correspondence in Yiddish is perhaps slightly complicated by the fact

that there are many (indeed, most) forms for which not all states of gradation appear: as discussed immediately above, not all bare verbs which can take *tse-* also have a *tse*-prefixed form with the reflexive marker, and there are some verbs for which the reflexive marker is obligatory under *tse*-prefixiation. Despite this, the meaning of the constructions, when they are found, is roughly predictable from the morphological form.

The final descriptive point to address is the distributional relationship between *tse-* and the reflexive marker *zikh* 'self'. Previous accounts have variously described the patterning of *tse-* with *zikh* 'self' in somewhat restrictive terms: Jacobs (2005) says that the ingressive sense of *tse-* always coöccurs with *zikh* 'self'; Beinfeld & Bochner (2013) agree, but further restrict the construction to "verbs expressing emotion." The data presented above in section 3 demonstrate that this is not quite the case. Rather, *tse-* can occur without the verb taking *zikh* 'self' as an object, as it does for forms like (10f) *vign* 'to swing (trans.)' ~ *tse-vign* 'to set swinging (trans.)'. Indeed, the strongest evidence in favor of the independence of the two forms is cases like (9a) or (10f), where the *tse*-prefixed form can optionally take *zikh* 'self' to change the predicate's meaning in the expected way by making it reflexive; (9a) shows an instance where the unprefixed form necessarily takes the reflexive pronoun, while (10f) shows one where the unprefixed form does not, indicating that the optionality of the reflexive pronoun on certain *tse*-prefixed verbs is independent of the use of the reflexive pronoun on the base verb.

Despite the distributions of *tse-* and *zikh* 'self' being somewhat less coupled than has been previously described, there are some common patterns which can be gleaned. First, *tse-* does not ever appear to block the presence of *zikh* 'self' when it also appears in the unprefixed form; in these cases, the '*tse-* + verb + *zikh* 'self" form is always licit. Second, there are cases when the use of *zikh* 'self' in the prefixed form does appear obligatory even when the unprefixed form of the verb does not take it. These include the emotive verbs identified by past analyses, but extend to physical actions as well, such as (10a) *biln* 'to bark' ~ *tse-biln zikh* 'to start barking', (10e) *blitsn* 'to flash' ~ *tse-blitsn zikh* 'to start to flash', and (10q) *redn* 'to speak' ~ *tse-redn zikh* 'to launch into a conversation'. The commonality these verbs all share is that of internal causation in the sense of Levin & Hovav (1994); for internally-caused verbs, the bare causative form (i.e., *tse*-prefixed without *zikh* 'self') is disallowed. That internally-caused verbs don't participate in the causative form of the cline identified above in (12) is perhaps unsurprising, since it accords with cross-lingual trends (Levin & Hovav 1994). Interestingly, while holding for activities, this generalization doesn't appear to extend to states, where cases like (9b) *glien* 'to glow' ~ *tse-glien* 'to make white-hot' and (9e) *yushen* 'to flow (of blood); to bleed' ~ *tse-yushen* 'to make bleed' show that states with internal causation permit bare causative forms. Contrastingly, verbs whose unprefixed form is transitive seem to mostly permit *tse*-prefixed forms freely without the reflexive marker.

4.2 Formal Analysis

I begin by constructing the required notions of time and events for a Neo-Davidsonian analysis. Let $\langle T_\bullet, \preccurlyeq \rangle$ be the set of partially-ordered moments in time, and let $T \triangleq \{\mathrm{co}\, \bar{t} \in \mathcal{P}(T_\bullet)\}$ be the set of intervals on $T_\bullet$ (i.e., closed convex subsets t of the power set of $T_\bullet$). Let $\min(t)$ be the earliest moment $t_\bullet$ in t; that is, the $t_\bullet \in t$ such that $t_\bullet \preccurlyeq t'_\bullet$ for all $t'_\bullet \in t$. Similarly, let $\max(t)$ be the latest moment $t_\bullet$ in t; that is, the $t_\bullet \in t$ such that $t'_\bullet \preccurlyeq t_\bullet$ for all $t'_\bullet \in t$. Then for any intervals t, t' I write $t \leq t'$ to mean that $\min(t) \preccurlyeq \min(t')$. This construction of temporal intervals T as sets will suffice for our purposes, though intervals in event semantics are frequently analyzed as also being mereologies, as in Krifka (1998).

For events we will need a mereology to account for subevent hood. Let E be a collection of events e, defined as

a spatiotemporally bound occurrences; denote by the runtime $\tau(e) \in T$ the interval of time at which e occurs. For any two events e, e' I write $e \circ e'$ to mean that e and e' overlap temporally; that is, there exists some non-empty t such that $t \in \tau(e) \cap \tau(e')$. Similarly, I extend the '$\leq$' relation to factor through τ, writing $e \leq e'$ to mean that e precedes e'; that is, $\tau(e) \leq \tau(e')$. I extend the '$\subseteq$' relation to express the mereological parthood of events, writing $e \subseteq e'$ to mean that e is a subevent of e'.[2] I will remain agnostic as to the exact nature of what qualifies the subeventhood relation. For the examples presented here, it would suffice to imagine that $e \subseteq e'$ just in the case that $\tau(e) \subseteq \tau(e')$, that the relations associated with e (including thematic roles θ) are a subset of those of e', and that e occupies a subsets of the spatial locations occupied by e'; these properties follow from considering τ, thematic roles, and spatial location to all be homomorphisms with respect to $\langle E, \subseteq \rangle$ (see, *inter alia*, Krifka 1998). I will make use of conventional thematic roles like AG for agenthood and TH for themehood.

Throughout, let ϕ refer to some predicate, let x, y refer to entities, and let e, e', s refer to eventualities. I begin by defining a notion of temporal minimality in (14).

(14) $\textsc{minimal} \triangleq \lambda\phi e\,.\,\phi(e) \wedge \forall e' \subsetneq e[\neg\phi(e')]$

We say that e is a minimal ϕ-event just in the case that e is a ϕ-event and no proper part of e is a ϕ-event. This notion of minimality is functionally quite similar to the **Small** predicate employed by Diesing's (2000) for her analysis of aspect in the Yiddish light-verb construction. To formalize the notion of a theme transitioning into some state, I define a CHANGE-TO operator following Piñón (2001) which stipulates that e is a CHANGE-TO-ϕ event just in the case that e precedes and overlaps some ϕ-event s and is preceded by some non-ϕ-event s' which shares a theme x with e and s, as in (15).

(15) $\textsc{change-to} \triangleq \lambda\phi x e\,.\,\exists s[e \leq s \wedge e \circ s \wedge \phi(s) \wedge \textsc{th}(e, x) \wedge \textsc{th}(s, x) \wedge \exists s'[s' \leq e \wedge \neg\phi(s') \wedge \textsc{th}(s, x)]]$

To account for the observed use of *tse-* as an prefix which describes a minimally-temporally-extended transition of an underlying base predicate, I will make use of BECOME and CAUSE operators in the style of Dowty (1979). I define BECOME as an operator in (16) which stipulates that e is a BECOME-ϕ event just in the case that it is a minimal CHANGE-TO-ϕ-event:

(16) $\textsc{become} \triangleq \lambda\phi x e\,.\,\textsc{minimal}(\phi, e) \wedge \textsc{change-to}(\phi, x, e)$

I similarly define CAUSE as an operator on events and an agent y in (17), stipulating that y is the agent of e and that e causes e' to occur, baked out in an appropriate analysis for what **cause** ought to mean:

(17) $\textsc{cause} \triangleq \lambda e y e'\,.\,\textsc{ag}(e, y) \wedge \mathbf{cause}(e, e')$

I define *tse-* as a CAUSE-BECOME operator in (18); for some ϕ 'verb' I stipulate that 'y *tse*-verb x' just in the case that y causes x to become ϕ:

(18) $[\![\textit{tse-}]\!] \triangleq \lambda\phi x y e e'\,.\,\textsc{cause}(e, y, e') \wedge \textsc{become}(\phi, x, e')$

This accounts for the derivation of the causative (12b) from a base predicate in (12a) through *tse*-prefixation. We start with some lexical denotations in (19), where g is some assignment function.

(19) a. $[\![\textit{glien}]\!] \triangleq \lambda x s.\,\textsc{th}(s, x) \wedge \mathbf{glow}(s)$

b. $[\![\textit{es}_i]\!]^g \triangleq g(i)$

c. $[\![\textit{dovid}]\!] \triangleq \mathbf{dovid}$

2. Implicitly I assume a binary sum operation '$\oplus$' on events and stipulate that τ is a homomorphism with respect to $\langle E, \oplus \rangle$ and furthermore that '$\subseteq$' obeys the necessary properties for a proper mereology, but the specifics will not matter much for the analysis here.

Following Davidson (1967) I assume existential quantification over eventualities, so we have the following denotation for the base form of (12a):

(20) a. *es glist*
'It glows.'
b. $[\![es_i\ glist]\!]^g = \exists s.[\textsc{th}(s, g(i)) \wedge \mathbf{glow}(s)]$

Under *tse*-prefixation, the predicate *glien* 'to glow' combines with the CAUSE-BECOME operator to yield a causative form:

(21) $[\![\text{tse-}]\!]\,([\![\text{glien}]\!]) = \lambda x\, y e e' .\ \textsc{cause}(e, y, e') \wedge \textsc{become}(\mathbf{glow}, x, e')$

Then a denotation for the causative form of (12b) is given by

(22) a. *dovid tse-glist es*
'Dovid makes it white-hot.' LIT: 'Dovid makes it glow.'
b. $[\![dovid\ tse\text{-}glist\ es_i]\!]^g = \exists e e'.\ \textsc{cause}(e, \mathbf{dovid}, e') \wedge \textsc{become}(\mathbf{glow}, g(i), e')$

The inchoative reading of (12c) is further derivable through an anticausitivzation of (12b) via reflexivization. I treat the reflexive pronoun *zikh* 'self' as denoting a reflexivization operator, where $\mathfrak{R}$ is a some transitive predicate and x, an entity:

(23) $[\![zikh]\!] \triangleq \lambda \mathfrak{R} x.\mathfrak{R}(x, x)$

The inchoative reading subsequently follows from the combination of a *tse*-prefixed form with the reflexivization operator to produce a CAUSE-BECOME relation in which the theme of the underlying predicate is also the agent of causation:

(24) $[\![tse\text{-}glien\ zikh]\!] = [\![zikh]\!]\,([\![tse\text{-}glien]\!]) = \lambda x.\,[\![tse\text{-}glien]\!]\,(x, x)$

Thus, a denotation for the inchoative form of (12c) is given by

(25) a. *es tse-glist zikh*
'It catches fire.' LIT: 'It becomes glowing.'
b. $[\![es_i\ tse\text{-}glist\ zikh]\!]^g = \exists e e'.\ \textsc{cause}(e, g(i), e') \wedge \textsc{become}(\mathbf{glow}, g(i), e')$

For atelic non-stative predicates like activities, the derivation and interpretation of *tse*-prefixed forms from base predicates is largely unchanged. [3] For telic predicates, though the derivation is similarly straightforward the interpretation of the resulting form is slightly changed. Recall that the definition of *tse-* requires that the underlying verbal predicate ϕ be minimal with respect to temporal extension. For telic predicates, the temporally-minimal transition which counts as a ϕ-event is the one in which the underlying goal is attained, and hence the natural reading of such prefixed forms is one of completion, since the salient transition marks the end of the change rather than the commencement.

3. The only point of note is how to specify the interaction between the CHANGE-TO operator and non-stative predicates; traditionally, such transition operators are considered specifically to be change of *state* relations, as in Piñón (2001), and so are only able to combine with predicates which are themselves states. Adapting our CHANGE-TO operator to work with non-stative predicates could be accomplished in two ways: either by relaxing the restrictions on what kinds of predicates CHANGE-TO can take, or by stipulating that CHANGE-TO selects for an underlying stative predicate which is lexically associated with a non-stative predicate; for instance, in the case of *fayern* 'to rant' ~ *tse-fayern* 'to lose one's temper', one could imagine that *tse-* combines with a ϕ representing the predicate 'to be ranting' rather than the more apparent 'to rant.' The choice of one method of resolution over the other does not have any consequence for the analysis presented here, and so is elided.

A more nuanced challenge lies in addressing the interaction between *tse-* and *zikh* 'self' in cases when the reflexive marker appears obligatory. The simpler of these cases occur when the underlying base form necessarily takes *zikh* 'self', such as in (10b) *butsken zikh* 'to jostle one another' ~ *tse-butsken zikh* 'to bump into'. Here, it suffices to say that the preclusion on the bare-*tse-* forms arises from a lexical restriction on the base predicate: if the unprefixed form only exists with *zikh* 'self', then *tse-*prefixation has no way of producing a form without *zikh* 'self'. More complicated are the cases when the unprefixed form does not take *zikh* 'self' but the *tse-*prefixed form must, as is the case for non-stative predicates with internal causation like (10i) *tantsn* 'to dance' ~ *tse-tantsn *(zikh)* 'to break into dance'. The condition in which the causative form is precluded is when the base predicate is both agentive and internally-caused. When the predicate is non-agentive, as with stative predicates like *glow* 'to glow', the intransitive base predicate has no trouble being causitivized by *tse-*; and when the base predicate is agentive by externally caused, as with *mishn* 'to mix (trans.)', the transitive reading is carried forward into the causative. To account for this, I first introduce in (26) two new operators capturing the notions of agentivity and internal causation.

(26) a. $[\![\textsc{agentive}]\!] \triangleq \lambda\phi.\exists ex\,.\,[\phi(e) \wedge \textsc{ag}(e,x)]$

b. $[\![\textsc{int-cause}]\!] \triangleq \lambda\phi.\forall e\,.\,[\phi(e) \rightarrow \exists xe'.[\mathbf{cause}(e,e') \wedge \textsc{th}(e,x) \wedge \textsc{ag}(e',x)]]$

I will revise slightly the denotation of *tse-* to include a presupposition that the base predicate ϕ which *tse-* takes must not be agentive, internally-cause, and have theme x which differs from the agent of causation y.

(27) $[\![\textit{tse-}]\!] \triangleq \lambda\phi xyee'\,.\,\textsc{cause}(e,y,e') \wedge \textsc{become}(\phi,x,e')\ \&\ \neg[\textsc{agentive}(\phi) \wedge \textsc{int-cause}(\phi) \wedge y \neq x]$

For stative predicates like *glien* 'to glow', the presupposition is met since the predicate fails to be agentive; for externally-caused agentive predicates like *mishn* 'to mix (trans.)', the presupposition is met since the predicate fails to be internally caused. But for internally-caused agentive predicates like *tantsn* 'to dance', pure *tse-*prefixation causes presupposition failure. To see why, consider the following lexical definitions:

(28) a. $[\![\textit{tantsn}]\!] \triangleq \lambda xe.\,\textsc{ag}(e,x) \wedge \mathbf{dance}(e)$

b. $[\![\textit{ester}]\!] \triangleq \mathbf{ester}$

The base form derives as expected:

(29) a. *dovid tantst*
'Dovid dances.'

b. $[\![\textit{dovid tantst}]\!] = \exists e.\,\textsc{ag}(e,\mathbf{dovid}) \wedge \mathbf{dance}(e)$

But for a theoretical causative version like (30), the mismatch between the causal agent and the theme of *tantsn* 'to dance' causes a presupposition failure:

(30) a. **dovid tse-tantst ester*
INTENDED: 'Dovid makes Ester break into dance.'

b. $[\![\textit{dovid tse-tantst ester}]\!] = \exists ee'.\,\textsc{cause}(e,\mathbf{dovid},e') \wedge \textsc{become}(\mathbf{dance},\mathbf{ester},e')\ \&\ \neg[\textsc{agentive}(\phi) \wedge \textsc{int-cause}(\phi) \wedge \mathbf{dovid} \neq \mathbf{ester}]$

The only way to repair the presupposition failure is to detransitivize the causative form by ensuring the causal agent and verbal theme are matched with reflexivization, as in (31).

(31) a. *dovid tse-tantst zikh*

'Dovid breaks into dance.' LIT: 'Dovid makes himself break into dance.'

b. $[\![\textit{dovid tse-tantst zikh}]\!] = \exists ee'.\ \textsc{cause}(e, \textbf{dovid}, e') \wedge \textsc{become}(\textbf{dance}, \textbf{dovid}, e')\ \&\ \neg[\textsc{agentive}(\phi) \wedge \textsc{int-cause}(\phi) \wedge \textbf{dovid} \neq \textbf{dovid}]$

5 Discussion

The analysis presented above accounts for the distributional generalizations observed for the use of *tse-* in causative, inchoative, and completive predicates. For most predicates which can take *tse-*, prefixation yields a causative form whose temporal extension is minimized as much as possible. Further combination with the reflexive pronoun *zikh* 'self' yields either an inchoative form (in cases when the base predicate is atelic) or a completive one (when the base predicate is telic). This connection to telicity unifies the prior descriptions of *tse-* function on the one had as a perfective operator and on the other as an ingressive one. Exceptional cases arise when either the base predicate is obligated to take *zikh* 'self', in which case the *tse-*prefixed form must also do so; or when the base predicate is agentive and internally caused, as is the case with many verbs of emotion. Here, the presupposition against predicates being agentive, internally caused, and having a causal agent which differs from the verbal theme block the presence of *tse-*prefixed forms without the reflexive marker, making *zikh* 'self' obligatory for such predicates.

Despite this nice story, a few questions are left unanswered by this analysis. First, as discussed in section 2.4, one of the major points of contention for those who view Yiddish as lacking aspectual contrast marking is the wide degree of lexical selection which is found in the formation of so-called 'perfective' constructions. Though the data clearly show that *tse-* is productive enough to encompass more than just a small selection of verbs, there is much variation in which prefixes any given verb may take to mark 'aspect.' Weinreich's (1968) study partitions these various 'perfective' markers listed in (5) according to their syntactic properties: prefixes which are "separable" from the verbal predicate they attach to (akin to phrasal verbs in English; cf. the contrast between *eat* and *eat up*); and those which are "inseparable" from the predicate. It is to this latter category that *tse-* belongs, and I believe that this analysis could be extended without much difficulty to the rest of the inseparable verbal prefixes. Aside from sharing a distribution which points to a common syntactic category, the rest of these prefixes share the property of contribution both spatial and temporal meanings.

Related to the matter of extending the analysis to operators of the same syntactic distribution is the question of what structure underlies the semantic forms of the construction. The analysis presented here is similar to that presented in Diesing (1997, 2000) for the semantics of the *shtam-konstruktsie* light-verb construction which similarly produces aspectual variations on the base verbal predicate. Diesing argues that the aspectual information is contributed by an AspectP projected externally to the VP, and has a denotation quite similar to that which I give for *tse-* above, though her definition lacks the presupposition conditions for internal causation and agentivity, and uses a different notion of minimal temporal extension which does not yield both inchoative and completive readings. Nevertheless, the similarity in analysis raises interesting questions about the nature of the two constructions in Yiddish: to what extend do they share syntactic distributions? Are the conditions on use similar, or do they pattern differently?

Also of interest is the question of how the analysis presented here predicts tse- (and potentially other inseparable

verbal prefixes) interact with other constructions in Yiddish, namely other causative and change constructions. Luchina (2022) notes that Yiddish possesses an analytic causative construction '*makhn* 'to do' + INFINITIVE' and an anticausative 'become' construction '*vern* 'become' + PARTICIPLE':

(32) **Analytic equivalents to *tse-* and *zikh*** [Luchina 2022]

a. *keyn zakh in der velt ken undz nit makh-n farges-n in dir*
NEG thing in DEF world can.3SG 3PL NEG make-INF forget-INF PREP you
'Nothing in the world can make us forget you.'

b. *dos likhtl ver-t farloshn*
DEF candle become-3SG extinguish.PTCP
'The candle goes out (by itself).'

These represent analytic counterparts to the roles that *tse-* and *zikh* 'self' play in this analysis. As such, it is natural to wonder how, if at all, they interact with the causative and inchoative/completive forms discussed here. Are such forms syntactically permitted in the analytic constructions? If so, is there any observed difference be meaning? Does the selectional restriction observed for which verbs can take *tse-* without *zikh* 'self' still hold? These questions should be answered with a broader corpus search and a revised language consultancy.

Bibliography

Aronson, Howard. 1985. On Aspect in Yiddish. *General Linguistics* 25. 171–189. https://www.proquest.com/docview/1301509049/19D4A54E07BE4381PQ/4?accountid=12768&imgSeq=1.

Avineri, Netta. 2014. Yiddish: A Jewish Language in the Diaspora. In Terrence G Wiley, Joy Kreeft Peyton, Donna Christian, Sarah Catherine K Moore & Na Liu (eds.), *Handbook of Heritage, Community, and Native American Languages in the United States*, 263–271. Routledge.

Beinfeld, Solon & Harry Bochner (eds.). 2013. *Comprehensive Yiddish-English Dictionary*. Bloomington, MN: Indiana University Press. https://iupress.org/9780253009838/comprehensive-yiddish-english-dictionary/.

Benedict, Eliyahu. 2022. Yiddish among Former Haredim. *Journal of Jewish languages* 10. 224–266. https://doi.org/10.1163/22134638-bja10024.

Binnick, Robert I. 1991. *Time and the Verb: A Guide to Tense & Aspect*. Oxford University Press.

Comrie, Bernard. 1976. *An Introduction to the Study of Verbal Aspect and Related Problems* (Cambridge Textbooks in Linguistics). Cambridge, England: Cambridge University Press. 156 pp.

Dahl, Östen. 1985. *Tense and Aspect Systems*. London, England: Blackwell. 240 pp.

Davidson, Donald. 1967. The logical form of action sentences. In Nicholas Rescher (ed.), *The logic of decision and action*, 81–95. Pittsburgh, PA: University of Pittsburgh Press. https://doi.org/10.1093/0199246270.003.0006.

Diesing, Molly. 1997. Light verbs and the syntax of aspect in Yiddish. *The Journal of Comparative Germanic Linguistics* 1. 119–156. https://doi.org/10.1023/A:1009751908064.

Diesing, Molly. 2000. Aspect in Yiddish: The semantics of an inflectional head. *Natural Language Semantics* 8. 231–253. http://www.jstor.org/stable/23748693.

Dowty, David R. 1979. The semantics of aspectual classes of verbs in English. *Word meaning and Montague grammar*. 37–132. https://doi.org/10.1007/978-94-009-9473-7_2.

Fishman, Joshua Shikl. 2011. *Colds and Warmths about Yiddish today: Statistics about Yiddish Forward*. https://yiddish2.forward.com/node/3882.html.

Gold, Elaine. 1999. Aspect, tense, and the lexicon: Expression of time in Yiddish (1999). *Toronto Working Papers in Linguistics*. https://twpl.library.utoronto.ca/index.php/twpl/article/view/6511.

Harkavy, Alexander. 1925. *Yiddish-English-Hebrew Dictionary*. New York, NY: Alexander Harkavy. https://yalebooks.yale.edu/9780300108392/yiddish-english-hebrew-dictionary.

Jacobs, Neil G. 2005. *Yiddish: A Linguistic Introduction*. Illustrated edition. Cambridge ; New York: Cambridge University Press. 348 pp.

Katz, Dovid. 1987. *Grammar of the Yiddish Language*. London: Gerald Duckworth & Co. Ltd.

Klein, Wolfgang. 1994. *Time in Language*. 1st Edition. London, England: Routledge. 260 pp. https://doi.org/10.4324/9781315003801.

Koontz-Garboden, Andrew. 2009. Anticausativization. *Natural language & linguistic theory* 27. 77–138. https://doi.org/10.1007/s11049-008-9058-9.

Krifka, Manfred. 1998. The origins of telicity. *Events and Grammar*. 197–235. https://doi.org/10.1007/978-94-011-3969-4_9.

Levin, Beth & Malka Rappaport Hovav. 1994. *Unaccusativity*. Cambridge, Mass.: MIT Press.

Luchina, Elena. 2022. Yiddish Causal-Noncausal Alternation in Areal Perspective. *Journal of Jewish languages* 10. 87–119. https://doi.org/10.1163/22134638-bja10017.

Piñón, Christopher. 2001. A finer look at the causative-inchoative alternation. *Semantics and Linguistic Theory* 11. 346. https://doi.org/10.3765/salt.v11i0.2858.

Rothstein, Robert A. 1990. Yiddish Aspectology. In Paul Wexler (ed.), *Studies in Yiddish Linguistics*, 143–153. Tubingen, Germany: Max Niemeyer Verlag.

Schächter, Mordkhe. 1951. *Aktionen im Jiddischen: ein sprachwissenschaftlicher Beitrag zur Bedeutungslehre des Verbums*. Wien, Österreich: Universität Wien. https://www.proquest.com/pqdtglobal/docview/302025277/fulltextPDF/9BC42598CA3A4C0FPQ/1?accountid=12768.

Talmy, Leonard. 2003. *Toward a Cognitive Semantics*. Cambridge, MA: The MIT Press, Massachusetts Institute of Technology.

Vendler, Zeno. 1957. Verbs and Times. *The Philosophical Review* 66. 143. https://doi.org/10.2307/2182371.

Weinreich, Uriel. 1968. *Modern English-Yiddish Dictionary*. Knopf Doubleday Publishing Group. 856 pp.