Languaging and linguistic exostructures: Aligning cultural-historical, ecological, and distributed approaches to L2 development

Berkeley Language Center
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Steven L. Thorne
Department of World Languages and Literatures
Portland State University
&
Department of Applied Linguistics, University of Groningen
+ the 503 Design Collective
Recent and enduring influences (thanks!)

- **The Russian cultural-historical school**
  - Sociocultural and cultural-historical approaches (Cole, 1996; Engeström, 1987; Engeström & Sannino, 2009; Volosinov, 1973; Vygotsky, 1986)
  - Dialogical perspectives (Bakhtin, 1986; Dufva et al. 2011; Linell, 2005, 2009) and the *Agency and Languaging group* (U of Jyväskylä)

- **Distributed, usage-based, practice and ecological views**
  - *Distributed Language Group* and reconceptualizations of language, communication, and human sense-making (e.g., Cowley, 2009; Hodges, 2007; Järvinehto, 1998; Thibault, 2011; Steffensen, 2008)
  - Usage-based linguistics (e.g., Tomasello, 2003; Ellis & Cadierno, 2009)
  - Ecological approaches (e.g., Bateson, 1972; Kramsch, 2002; van Lier, 2000, 2004)
  - Social practice theory (Bourdieu, 1991; de Certeau, 1984; Hanks, 1996) and ethnomethodology (Garfinkel, 1967)

- **Dynamic, adaptive systems, and emergentist approaches**
  - Emergence, complexity, self-organization, and non-linear development (Five Graces Group, 2009; Elman, 2011; Hopper, 1998; Larsen-Freeman & Cameron, 2008; Spivey, 2007; de Bot, Lowie, Thorne, & Verspoor, 2013)
Talking points

1. A prism of ecologically oriented approaches to second language development
   • Russian cultural-historical school
   • Distributed language approach
   • Usage-based linguistics

2. Case studies
   1. Longitudinally tracking *es/que*
   2. The semiotic ecology and linguistic complexity of a game world
   3. Engineering interactivity: Design of a place-based plurilingual augmented reality experience

3. Semiotic agility and next steps
Distributed Language approach

• DLG-inspired reconceptualizations of language, cognition, and human sense-making (e.g., Cowley, 2009; Steffensen, 2008; Thibault, 2011)
• Contests the code approach, language as an abstract system independent of human action (e.g., Kravchenko, 2007)
• Human activity is an ‘ensemble process’ involving a brain-body-world continuum (Spivey, 2007; see also Atkinson, 2011)
• *Organism-environment system* (Järvilehto, 1998) – a unified ecology
• Shotter (2003:10) “we live in surroundings that are also living”
Scalar ecosocial relations

- 1\textsuperscript{st} order languaging & 2\textsuperscript{nd} order language
- “linguistic activity and the biological processes that subtend this emergence are entrained and ... constrained by higher order social meaning-making practices, discourse genres, and conventions [higher-scalar ecosocial relations]” (Thibault, 2000: 291) [see Maturana, 1978; Becker, 1988]
- **First order languaging** happens in real time, is immediate, but also embedded
- **Second order language**: sedimented patterns, evolving across longer time scales, constrain first-order realtime dynamics
- The “situational here-and-now is saturated by trans-situational structures” (Steffensen, in press)
Distributed language pedagogy: Adding a 3rd tier

Issue for L2 development

- We live in a 1st order reality
- Adaptive L2 pedagogical process →
  - Acknowledge the primacy & situatedness of 1st order languaging -- a distributed phenomenology of interactivity
  - Ascertain appropriate 2nd order language resources (including discrete morphosyntactic realizations/strings/pragmatic formulations!)
  - 3rd or tertiary order constructs: Create awareness of situation transcending patterns (2nd order constructs) to pedagogically scaffold 1st order interactivity
Russian cultural-historical school

• Includes sociocultural and cultural-historical theories of language and development (Volosinov, 1973; Vygotsky, 1978), activity theory (Engeström, 1987; Thorne, 2005; Thorne & Lantolf, 2007), and dialogical perspectives (Bakhtin, 1986; Dufva, 2010; Linell, 2009)

• 6th thesis on Feuerbach: “... human essence is no abstraction inherent in each single individual. It its reality it is the ensemble of social relations” (Marx, 1972:145)

• General Genetic Law of Cultural Development: Development first “appears between people as an interpsychological category, and then within the child as an intrapsychological category. ... Social relations or relations among people genetically underlie all higher [mental] functions and their relationships. This applies equally to voluntary attention, to logical memory, and to the formation of concepts. (LSV, 1978, 1981).
Russian cultural-historical school

• Culture understood as artifacts, patterns, and practices that are themselves constitutive of and distributed across interacting systems of activity and time scales

• Human mental development is dynamically and non-linearly constructed through engagement with the historical accumulation of ‘culture’ (van Geert, 1994; Stetsenko & Arievitch, 2004; de Bot, Lowie, Thorne, & Verspoor, 2013)

• Symbolic and material tools help us gain voluntary control over phylogenetically evolved mental functions
  – “The use of signs leads humans to a completely new and specific structure of behavior, breaking away from the traditions of biological development and creating for the first time a new form of a culturally based psychological process” (LSV, 1978)
  – Message of hope -- phylogenetic evolution slow, cultural-conceptual evolution fast
Usage-Based Linguistics

• Tomasello (e.g., 2003): language learning at the nexus of joint attention and intension-reading

• Imitation is key, + 1) *intention-reading* and *cultural learning*, 2) *schematization* and *analogy*, 3) *entrenchment* and *preemption*, and 4) *functionally based distributional analysis*

• The biological capacity supporting language is not linguistic in nature, but rather comprised the ability to share attentional frames, to recognize patterns, and to attune to the intentional actions of others – abilities shared to some degree by with other primates (e.g., Tomasello, 1999)
Usage-based L2 developmental sequence

- Construction-based L1 developmental sequence (Ellis, 2002; Lieven et al., 2003; Goldberg, 2006; Lieven & Tomasello, 2008)
- Formula > low-scope pattern > creative construction
- Ellis (2002) -- same sequence applicable for L2
- “All linguistic knowledge ... derives from the comprehension and production of specific utterances on specific occasions of use” (Tomasello, 2000:237-8)
Usage-based linguistics & tracking L2 development

Instant messaging, blogs, & multi-directional semiotic flows: An intervention study

Second Language Learners’ Contiguous and Discontiguous Multi-Word Unit Use Over Time

AZIZ YULDASHEV
The Pennsylvania State University
Department of Applied Linguistics
304 Sparks Building
University Park, Pennsylvania 16802
Email: ayuldashev@psu.edu

JULIETA FERNANDEZ
The Pennsylvania State University
Department of Applied Linguistics
304 Sparks Building
University Park, Pennsylvania 16802
Email: julieta@psu.edu

STEVEN L. THORNE
Portland State University
Department of World Languages and Literatures
PO Box 751
Portland, Oregon 97207
University of Groningen
Department of Applied Linguistics
The Netherlands
Email: steven.thorne@pdx.edu
Why formulaicity/multi-word units?

• Terms: Formulaic language, lexical bundles, chunks, CWOSTs

• Usage-based emergentist perspective: “grammar comes about through the repeated adaptation of form to live discourse” (see Bybee & Hopper, 2002):
  – Grammar = patterned sets of overlapping social experiences
  – “sedimented conventions that have been routinized out of the more frequently occurring ways of saying things” (Hopper, 1998)

• Formulaic sequences = ~60% of language use (Wray, 2002)

• Set frames (Goffman); recipient design (CA) and membership; collections of phenomenological similarity (Brouwer & Wagner, 2004); cognitively efficient
Formulaicity/multi-word units in L2

• Issues in the L2 literature (summarized by Nesselhauf, 2005)
  – Formulaic language production difficult for L2 learners; causes more problems than general vocabulary use
  – L2 learners use fewer instances of formulaic language than do native/expert speakers
  – L2 learners seem to lack awareness of lexical co-occurrence restrictions and combinatorial potential of lexical items
UBL for L2 development

- Construction-based developmental progression that is item-based and lexically dependent (Ellis, 2002; Tomasello, 2003)
- Eskildsen & Cadierno (2007) on development of Do-negation: Exemplar based on “I don’t know”, then expanded to other pronouns and verbs
- “As regularities are observed in experience, a language learner is likely to progress from a formulaic expression “I dunno,” to a more schematic “I don’t Verb,” to an increasingly abstract “NP aux neg Verb” (Eskildsen, 2009: 336)
Intervention: Designing for relevance & rewilding

• High school Spanish AP and level 2 courses
• Pedagogical intervention: Integrating blog and IM use
  – Semiotic ecology that is inclusive of both schooling and students’ broader life contexts (actual and desired)
• Longitudinal and dense data collection: 38 weeks, weekly blog entries (topical and free), weekly IM sessions outside of class (45min – 1 hr)
• Research focus: relation between in and out of school communicative practices -- interactivity system analysis
• Technology available at school (labs and laptop carts), public library, and home
Laminating and interfacing systems of activity

1. Educational uses of IM
2. Everyday culture-of-use of IM
3. Blog use in and out of class

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1. Use of IM in Spanish with classmates
2. Use of IM for social purposes with peers
3. Blogs catalyze interactivity system fusion

1. Student subject positions
2. Non-institutional identities

*CHAT graphic based on Engeström 1987, 1993*
Blogging: Individual Use Patterns: Es/Que

- Average production per student = 4900 words
- Three learners of FL Spanish:
  - High producing: Alicia (8577 tokens)
  - Low producing: Jose (3115 tokens) & Juan (2839 tokens)
- Words co-occurring with given chunks (the wings of es/que)
- Items in flexible slots emerging within the chunks (the midfield of es/que)
- Here – only Alicia’s data will be presented
Methodology

- Concgramming – automated search for contiguous and discontiguous phraseological patterns
- Still requires careful checking of results
- Elides problem of pre-established analytic focus
- Beyond content words – in this case, focus is on closed class words, sometime ignored by corpus linguistics
- Trace-forward methodology
Es/que

• Es/que is one of the most frequently occurring concgrams in the SpanishAP corpus
• Consists of a copulative verb *es* (‘is’) and the subordinating conjunction *que* (‘that’)
• In L1 Spanish, most frequent function is to introduce “an utterance which states the existence of an event or a state of affairs” (Romera, 2009:148)
• EG:
  – La única cosa que sé seguramente de mujeres *es que* ellas tienen una sofa en su cuarto de baño.
  – *The only thing that I know for sure about women is that they have a sofa in their bathroom.*
proximo examen flyker2flame (10:25:43 PM): si, es que tenemos discurso manana. your eyes lead
esa clase, es mucho? flyker2flame (10:29:12 PM): es que necesito cada punto que puedo obtener :P...
PM: (el sueno es de unas tres noches pasadas) es que esta con un amigo, no recuerdo donde o nada
dices "yo puedo comprenderlo" drubiel5: odio es que hace que el mundo gira Mcq797: que
PM: mirarla* your eyes lead [7:53 PM]: si, es que el dice pero el sabe todas las lineas!
1701: la unica problema de la comparacion es que los steelers son mucho mejor de psu
PM: si periodismo? EMM9213 (10:09:51 PM): si es que tu quieres estudiar? Jony416 (10:10:00 PM):
buen jugador de baloncesto tambien. MFen10: si es que Eric Meister me dijo. Bengedi1 2: Que es
your eyes lead: derretir? your eyes lead: es que el diccionario dice green aglow: si your
de la escuela your eyes lead (8:48:09 PM): si... es que marie me dicho tambien! flyker2flame (8:48:14
afuera de GameDay por el sabado. MFen10: si es que mi hermano me dijo. MFen10: Pienas que Penn
youngjry2413 (9:32:27 PM): el parte importante es que esta terminado ahora! kelkey119 (9:32:46 PM):
la minareta flyker2flame (8:52:20 PM): si, es que yo pensaba, pero fue la idea de ella
ahorita flyker2flame (6:51:07 PM): quiero, pero es que tengo que vivir "un dia a un tiempo" para no
gastas mucho tiempo por esc... el producto final es que es importante hit that redial (9:35:54 PM):
pensando green aglow (5:57:06 PM): y una cosa es que nunca debio ser deprimida your eyes lead
(10:04:12 PM): si TinaHoney360 (10:04:21 PM): es que ellos siempre estan juntos azift88 (10:04:33
es bonita, si? 3BeArA1524 (11:04:33 PM): si es que Andrew me dijo hace dos semanas 3BeArA1524
a el gawn Zone5003 6:54 PM]: si, es que yo pensaba, pero algunas personas me han
cinco!" TinaHoney360 (10:14:19 PM): heha, no es que a mi no me gusta, es que no hay "suspense"
sera aburrido green aglow (19:55:01): (la verdad es que me siento un poco triste que no voy) green
extranjeras DaRuler34 (9:42:27 PM): jaja si, es que en francesis flyker2flame (9:42:37 PM): si
mucho asi flyker2flame (9:01:17 PM): la verdad es que soy un poco envolvido en la cuenta de
flyker2flame (10:23:28 PM): solamente hay demasiado trabajo your eyes lead
el tema es abierto McCaffrey06: MEISTERVERILLE esc es que pasa Dan8887: si voy a traer gaseosa y vasos
la cosa mejor sobre trabajar en el Penn Stater es que es muy cerca MelloManiac44: de tu casa?

ahumalo Zone5003 [6:59 P.M.]: si, esto es que un profesor me dijo Zone5003 [6:59 P.M.]:
de clinton MelloManiac44 (5:21:30 PM): es que FEMA esta en el gobierno ahora excelsior 1701

mio es muy corto green aglow (20:16:28): pero es que leo demasiado rapido... flyker2flame

(11:34:35 PM): ok, mi problemas con ella es que no tiene pelo "frizzy" como hormone en el

fin de semana? Zone5003 [8:42 PM.]: cuando es? que dia y que hora? Jony416 [8:42 PM.]: no
cualquier cosa flyker2flame (17:21:17): si, eso es lo que me digo pero... en realidad probablemente

aye de mil zebular13: jaja zebular13: eso es lo que hago en dos semanas de trabajo en el Penn

estoy tan enojada. your eyes lead (8:27:50 PM): es lo que mereces si descargar el harry potter


es muy facil Big Blue 61500 (6:07:00 PM): si, es lo que pensel youngjr1324 (6:07:27 PM): pero,

no les gusta esperar y si el espero (wait?) es mas que decimos, ellos se quejan aziff08: ooh si

(9:06:14 PM): AEs zebular13 (9:06:30 PM): eso es lo que yo zebular13 (9:06:36 PM): eso es

(10:27:49 PM): es la naturaleza de las chicas y es por que yo no me gustan las chicas mucho del

y preguntas y simulaciones MelloManiac44: es mas que quiero hacer bballswingman: si todos

PM: si si yo tambien EMM9213 (11:09:02 PM): eso es por que yo olvide SBerArk1524 (11:09:21 PM): si yo

PM: despues del disastre el ano pasado, es bien que no fuiste! ValentineHooya signed off at

Zone5003 ( 7:21:34): ch Zone5003 ( 7:21:46): es raro que te escribir.. Zone5003 ( 7:21:54): una

[4:17 P.M.]: ok, bueno Zone5003 [4:18 P.M.]: es raro que tu clase no tiene que hablar con grupo

con la universidad kelkey19 (5:32:12 PM): eso es algo que tuve terminar o fui ir loco ups2394

PM: despues del disastre el ano pasado, es bien que no fuiste! ValentineHooya signed off at
dices sobre!! jaja flyker2flame: no podriamos. es algo que tienes que ver para entender Zone5003:

(5:06:30 PM): si, yo sell ups2384 (5:06:58 PM): Es mejor que yo voy a tu casa, y despues salimos

PM: !!!! Tinalver1360 (10:34:18 PM): y ahora, es claro que no es! aziff08 (10:34:27 PM): ja ja ja

de fisica tomas? youngjr2413 (6:39:15 PM): es mejor que tomando las clases en la universidad!
Sufrieron* anupdas23 (9:55:27 PM): Si, es muy triste que el país más fuerte en el mundo
un trabajo durante el año escolar? prince866: es diferente que en el verano? swindu66: sí es un
parece vivil youngjry124 (6:25:43 PM): si, es muy triste que personas quieren matar a sus
pero vamos a mirar... ups2384 (5:17:05 PM): no es necesario que tu necesites ir córmigo, tu puedes
Si, si, comprendo ups2384 (11:14:03 PM): pero es acceptable que yo piensa como eso, porque no
FM): O si, comprendo ups2384 (9:10:44 PM): sí es muy triste que los personas que tienen mucho
o SilentSting24: un problema no pero es un miracle que estamos en el cuatro final
puse sentir porque mi falta fue tan corta... es increible que mi madre llevó eso falta
aglow: a mi me gusta montar mi bici green aglow: es mas rápido que caminar green aglow: pero la
Astrodome, y muchos otros Zone5000 [4:42 PM]: es muy triste que algunos niños no tienen sus
en unas semanas ValentineHooya [4:56 P.M.]: es interesante que las clases son diferentes
no fue terrible swim4u66: oh esto es muy bueno! es una lastima que todavía tenemos muchos días del
mucho trabajo excelsior 1701 (10:05:12 PM): no es muy mal por que tengo periodos de LinkedIn
podemos esposos TinaHoney360 (6:30:41 PM): es una lastima que tengo que trabajar los dos días
dinero DaRuler34: si podemos excelsior 1701: es sorprendido que nadie lo hizo DaRuler34: si yo se
de la familia coyle swim4u66 (11:06:21 PM): es mas dificil que parecel swim4u66 (11:06:39 PM):
PM): muy pequeña limabeans8822 (11:35:34 PM): es mas pequeno que el colegio limabeans8822 (11:35:36
(10:54:02 PM): mucho eoi853 (10:54:38 PM): es una lastima que tengan sueno aziff98 (10:55:09
pero no comprendo limabeans8822 (7:16:49 PM): es una lastima que la clase de matemáticas es tan
gente le gusta oh 19 fifty 5 (10:54:20 PM): ....es exactamente que yo dije.... skitt23 (10:54:25
los lab's son emorres limabeans8822 (8:40:53 PM): es verdad...oi que los exames son monstruos eoi853
porque eran tanto aplicantes zebular13: pero no es una lastima que no pudiera entrar en Shrevers
youngjry124 (7:23:13 PM): moore probablemente es una persona que culpa a bush Big Blue 61568
casa en el roc'a skitt23: no lo oido zebular13: es una canción que cante cuando era nina en escuela
es una enfermedad que infecta a muchos seniors!
es un excuso bueno MelloManiac44: nada trabajo es más importante que yo! Mcg797: lo crees?
y yo conversamos de los ensayos de schreyer, es la primera vez que él tuvo interés en ayudándome,
yo pienso Zone5003 [4:36 PM]: cada cuidad es tan diferente que un otro cuidad green aglow
eso es mucho green aglow (17:06:52): quimica es mi única clase que no es AP green aglow
(9:00:34 PM): sii flyker2flane (9:00:48 PM): es todo el chisme que yo se... no oigo mucho así
dAkuler34: si, sera diferente BeccaG8718: y es la misma lugar que siempre BeccaG8718: no quieres
(9:00:34 PM): sii flyker2flane (9:00:48 PM): es todo el chisme que yo se... no oigo mucho así
alla son muuy simpaticas skitt23 (7:35:01 PM): es muy diferente que aqui oh 19 fifty 5 (7:35:06)
hit that redial (9:50:42 PM): pero el prom es cuando sabremos que el ano casi esta terminado
(7:15:58 PM): o quizas el fin de semestre es el unico tiempo que el nos de algo youngjry1324
PM: de nada PinkBooTeedStPh (4:30:02 PM): no es un poco triste que est es mi ultimo concierto
PM: no! es la verdad! sziff88 (10:19:29 PM): YL es divertido, pero que yo no quiero ir porque...
y tu? MFen10: Es un midterm? Bengeed 2: No pero de muchas cosas que yo no entiendo MFen10: Tienes
volver a la escuela manana? flyker2flane: no es muy mal... creo que es la primera dia de escuela
es muy aburrido Zone5003 [8:53 E.M.]: quien es el profesor?? y que haces durante la
en las noticias... green aglow [4:42 PM]: Pero es un poco extraño que algunos de los "ninos" cuales
me duele mi diente mucho palomafl: je ja es más información que quieres, si? mc257: estoy
marcos SilentSting24: no se... SilentSting24: es una posibilidad que yo voy a ir a boston con
felixelgatopd (10:14:50 PM): suspenso, si es cierto. tienes que interarte del libro de otra
d (8:05:12 PM): si, si... es una idea triste, pero es verdad....Espero que nos quedemos amigos
no levanta pesas durante gimnasias SilentSting24: es comico drubie15: que hizo? SilentSting24: ella se
(5:43:36 PM): Si si ups2384 (5:44:03 PM): pero... es muy "random" pero que piensas de la clase de
Alicia’s es/que repertoire

• Emphasizing particular elements:
  – Lo mejor es que no tendré que pensar en ... 
    *What is best is that* I won’t have to think about ...
  – Lo más interesante es que no me dirán adonde
    *The most interesting thing is that* they won’t tell me where

• Focusing function using pseudo-cleft construction:
  – Lo que no me gusta de notas en general es que no son justas.
    *what I don’t like about grades in general is that* they are unfair.
    [free relative + copula verb + cleft constituent]

• Introducing a reason or cause
  – La razón es que mis padres tienen las vacaciones ...
    *The reason is that* my parents have their vacation ...
  – La letra es tan cómica en su estupidez que siempre me hace ...
    *The lyrics are so funny in their stupidity that* [they] always make me
Alicia’s es/que repertoire

- Numerous instances of *la verdad es que*
  1. *la verdad es que* no me gusta el color rosado.
     *The truth is that* I don’t like pink.
     [Reinforce propositional load]
  2. *y la verdad es que* cambió bastante
     *and the truth is that* it has changed quite a lot
     [Springboard to most important part of utterance]
  3. *No es la verdad que* no hay injusticia aquí y
     *It is not the truth that* there is no injustice here
     [Epistemic stance marker]
  4. *La verdad es que* en los primeros días pensaba ...
     *The truth is that* in the first days I thought
     [Springboard; epistemic stance marker]
Patterns of *es/que* as part of MWUs

• “the truth is that” – MWU ‘teddy bear’ (Ellis, 2013)
• Sentence initial uses of *es/que* with a varied use of the opening slot
  – [the only problem] *is that* [clause]
  – [the most important thing] *is that* [clause]
  – [the best thing] *is that* [clause]
• Use of schematic frame
  – [to do X] *is something that* [clause]
• Pseudo-cleft constructions
  – What I don’t like about [X] *is that* [clause]
  – What I can say in sum *is that* [clause]
  – What makes me a little nervous *is that* [clause]
  – What I have learned *is that* [clause]
L2 research and assessment

• Methodologically, concgramming is a powerful approach to look at language development from usage-based perspective

• Detailed account of schematic variability and trend consolidation, phraseological tendencies (internal slot expansion and emergent plasticity) -- valid assessment of languaging activity

• Formulaicity and MWUs are not just the starting point, but also an achievement/outcome of language learning
L2 pedagogy

• Combining learner repertoires into a single corpus can:
  – Reveal cohort wide tendencies
  – Serve pedagogical purposes – raising learner awareness of usage trends and possibilities, compare own data to expert speaker corpora, etc. (data driven learning)
  – Can be used to provide targeted and contingent feedback
Dynamics in massively multiplayer games

Virtual worlds/MMOs by sector
Q1 2012

- Live or open beta
- In development/private beta
- Closed/not available

Sponsored by vWoGo

Get in touch with us for world games
Virtual Worlds: Sizes by Territory

- North American
- South America
- Western Europe
- Eastern Europe
- Asia
- Other

Age 5-10
320m accs

10-15
652m

15-25
385m

25+
42m

Registered Accounts Q2 2011

KZERO Worldwide
The semiotic ecology and linguistic complexity of an online game world

STEVEN L. THORNE
Portland State University (USA) and University of Groningen (Netherlands)
(email: steven.thorne@pdx.edu)

INGRID FISCHER
University of Groningen, The Netherlands

XIAOFEI LU
The Pennsylvania State University, USA
Core tenets of second language development

- All theories of adult L2 development acknowledge the importance of meaningful communicative engagement and exposure to adequate volumes of the L2
- Quality of the linguistic environment is a primary driver of language development
- Distributions, frequencies, functions, and forms, and their salience, affects developmental rates and outcomes (e.g., Ellis & Collins, 2009; Ellis & Ferreira-Junior, 2009)
Empirically assessing an MMO: World of Warcraft

- What do players actually do in MMOs like WoW?
- What, if any, game-external semiosis do they read and/or author?
- What is the linguistic complexity of high frequency WoW associated texts?
World of Warcraft
World of Warcraft
World of Warcraft
World of Warcraft
World of Warcraft
Assessing linguistic complexity
Thorne, Fischer, & Lu (2012): ‘Semiotic ecology online game world’ ReCALL

- Survey: 64 WoW players
  - Dutch (N=32, 16 females, 16 males) (Age M=26.6, SD=8.9)
  - Americans (N=32, 11 females, 21 males) (M=33.1, SD=9.2)
- Surveys were publically posted on WoW-related sites, distributed through authors’ social networks, and redistributed by initial respondents
- Demographics, play style, communication tool preferences, languages actively used, languages exposed to, use of external websites
Play experience

How long have you been playing WoW

- 1-5 months
- 1-2 years
- 5-6 years

Dutch
Americans
Frequency of play

How often do you play

- less than once a month
- 1-3 times a month
- 1-3 times a week
- 4 times a week or more

Comparison between Dutch and Americans:
Duration of play episodes

How many hours at a time do you play

- less than 1-2 hours
- 3-4 hours
- 5-6 hours
- more than 6 hours

Dutch
Americans
Playing together, alone, or mixed

Dutch =
81% together
13% mixed
6% alone

American =
69% together
6% mixed
25% alone
Artifacts
*Narratives, Machinima, Modding, Art

Metaplay
*Strategy sites, Documentation

Game Play
*Quest texts, Communication, Collaboration, Navigation

- Perception-action cycles
- Effectivity-affordance pairings
- Shuttling among discourses
Assessing linguistic complexity

- **Readability: Coleman-Liau Index (CLI):** word character count and sentence length
- **Lexical sophistication (LS):** ratio of sophisticated lexical word types divided by the number of lexical word types
- **Mean segmental type-token ratio (MSTTR):** measures lexical diversity as a function of type-token ratio per 50 word sample
- **Developmental Level Scale (D-Level):** measures syntactic and structural complexity

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Simple sentences, including questions</td>
<td>John cried.</td>
</tr>
<tr>
<td></td>
<td>Sentences with auxiliaries and semi-auxiliaries</td>
<td>This has solved it.</td>
</tr>
<tr>
<td></td>
<td>Simple elliptical (incomplete) sentences</td>
<td>John did.</td>
</tr>
<tr>
<td>1</td>
<td>Infinitive or -ing complement with same subject as main clause</td>
<td>Try to smile.</td>
</tr>
<tr>
<td>2</td>
<td>Conjoined noun phrases in subject position</td>
<td>John and Mary left.</td>
</tr>
<tr>
<td></td>
<td>Sentences conjoined with a coordinating conjunction</td>
<td>I came early but Peter arrived late.</td>
</tr>
<tr>
<td></td>
<td>Conjoined verbal, adjectival or adverbial constructions</td>
<td>He sang and jumped.</td>
</tr>
<tr>
<td>3</td>
<td>Relative or appositional clause modifying object of main verb</td>
<td>John scolded the boy who stole his bicycle.</td>
</tr>
<tr>
<td></td>
<td>Nominalization in object position</td>
<td>I understand his rejection of the offer.</td>
</tr>
<tr>
<td></td>
<td>Finite clause as object of main verb</td>
<td>John knew that Mary was angry.</td>
</tr>
<tr>
<td></td>
<td>Subject <strong>extraposition</strong></td>
<td>It was hard for John to tell Mary.</td>
</tr>
<tr>
<td></td>
<td>Raising</td>
<td>John seems to Mary to be happy.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Nonfinite</strong> complement with its own understood subject</td>
<td>I saw him walking away.</td>
</tr>
<tr>
<td></td>
<td>Comparative with object of comparison</td>
<td>John is older than Mary.</td>
</tr>
<tr>
<td>5</td>
<td>Sentences joined by a subordinating conjunction</td>
<td>They won't play if it rains.</td>
</tr>
<tr>
<td></td>
<td><strong>Nonfinite</strong> clauses in adjunct position</td>
<td>Having tried both, I prefer the second one.</td>
</tr>
<tr>
<td>6</td>
<td>Relative or appositional clause modifying subject of main verb</td>
<td>The man who cleans the room left early.</td>
</tr>
<tr>
<td></td>
<td>Embedded clause serving as subject of main verb</td>
<td>For John to have left Mary was surprising.</td>
</tr>
<tr>
<td></td>
<td>Nominalization serving as subject of main verb</td>
<td>His rejection of the offer was unexpected.</td>
</tr>
<tr>
<td>7</td>
<td><strong>More than one structure from Levels 1-6</strong></td>
<td>John decided to leave Mary when he heard that she was seeing Mark.</td>
</tr>
</tbody>
</table>
Artifacts
*Narratives, Machinima, Modding, Art

Metaplay
*Strategy sites, Documentation

Game Play
*Quest texts, Communication, Collaboration, Navigation
VELINDE STARGSONG

Speak with Thyn’tel Bladeweaver at the Warrior’s Terrace in Darnassus.

DESCRIPTION

Velinde Stargaon was my predecessor here in Ashenvale Forest. At first it seemed she had the situation in Felwood under control, but little by little her efforts faltered. One day, she simply disappeared.

I was sent here to continue her work. I’m afraid I know nothing of the priestess, however. Perhaps Thyn’tel Bladeweaver, one of the commanders of the Sentinels, knows further details of her disappearance that I was not a
Assessing linguistic complexity: Quest texts

<table>
<thead>
<tr>
<th>Quest type</th>
<th>Number of quests</th>
<th>Number of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quest chains</td>
<td>178</td>
<td>18,538</td>
</tr>
<tr>
<td>Class specific</td>
<td>185</td>
<td>18,318</td>
</tr>
<tr>
<td>Text sample</td>
<td>d-0</td>
<td>d-7 (with description of syntactic structures present)</td>
</tr>
<tr>
<td>-------------</td>
<td>-----</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td><strong>Quest chains</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Hurry!</td>
<td>Their beliefs are similar to ours and so killing them is somewhat distasteful, but if they lack the strength to resist us, then they do not deserve their lives. [<em>sentences joined by subordinating and coordinating conjunctions]</em></td>
</tr>
<tr>
<td>2.</td>
<td>Trust me!</td>
<td>The sprites and satyrs that have taken up residence in the area feed upon the magical energies of the area, their powers growing from continued exposure. [<em>conjoined noun phrase in subject position; relative clause modifying subject of main verb; nonfinite clause in adjunct position]</em></td>
</tr>
</tbody>
</table>
Assessing linguistic complexity

<table>
<thead>
<tr>
<th>Text sample</th>
<th>d-0</th>
<th>d-1</th>
<th>d-2</th>
<th>d-3</th>
<th>d-4</th>
<th>d-5</th>
<th>d-6</th>
<th>d-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quest chains</td>
<td>313</td>
<td>18</td>
<td>68</td>
<td>64</td>
<td>26</td>
<td>61</td>
<td>16</td>
<td>628</td>
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<tr>
<td>Class specific quests</td>
<td>312</td>
<td>14</td>
<td>87</td>
<td>63</td>
<td>32</td>
<td>48</td>
<td>11</td>
<td>651</td>
</tr>
</tbody>
</table>
Quest texts: Right skewed “U”
Artifacts
*Narratives, Machinima, Modding, Art

Metaplay
*Strategy sites, Documentation

Game Play
*Quest texts, Communication, Collaboration, Navigation
Having just completed the Zul'Farrak guide for other people that aren’t enough.

Fair warning, it’s very picture-intensive, very long, and a complete spoilsport.
Game-external websites: Core to gameplay

- Moonpunisher: “I use quite a few external websites, and I have all of them open while I am playing the game, so that when I need to I can immediately look stuff up.” [translated from Dutch]

- Glakela: “I never play full screen, I always play in a way so that I can just reach my desktop and can immediately access my browser. I will just put myself in a safe town, so nothing can happen and then I will calmly start reading and looking up things.” [translated from Dutch]
Game-external websites: Everyone uses them

- [http://www.wowhead.com](http://www.wowhead.com): Topics include strategy for completing quests and information on items in the game (e.g., armor, weapons, etc).
- [http://www.wowwiki.com/Portal:Main](http://www.wowwiki.com/Portal:Main): Lore and mythology of the WoW universe; information related to different classes (or types) of online characters
- [http:// elitistjerks.com/](http:// elitistjerks.com/): Game related strategy and general topics related to WoW
Game-external websites: Right skewed “U”
Game strategy websites as scientific discourse (Steinkuehler & Duncan, 2008)

- Analyses of nearly 2,000 WoW-related forum posts
- 86% of the entries displayed “social knowledge construction” rather than “social banter”
- 65% treated knowledge “as an open-ended process of evaluation and argument”
- 50% + included evidence of systems based reasoning
- 10% showed scientifically precise model-based reasoning (Steinkuehler & Duncan, 2008, p. 539)
Remix and recombinatory texts

- Propagations of figurative worlds across representational media
- “Fan fiction” -- enthusiasts of media (books, movies, television, comics, video games) borrow elements of these popular cultural texts, such as characters, settings, and literary tropes, to construct their own narrative fictions (e.g., Black, 2008; Thorne, 2009)
- Black 2008: (Nanako, Chinese L1, received 7k ‘reader reviews’)
fanfiction.net → games → warcraft
Straydog Saga » by Ori Whitedeer reviews
When wayward warrior Shandori and her questionable companions accept a job to obtain dragon bones, the group of mercenaries find themselves fighting for their lives, the fate of Azeroth, and enough gold to buy their next ale.
Rated: T - English - Adventure/Fantasy - Chapters: 21 - Words: 92,196 - Reviews: 4 - Updated: 4-13-11 - Published: 10-24-10

Road Trip of madness » by Ranger24 reviews
The Faction Leaders of the Horde and the Allaince are invited to Blizzcon but when an accident kills the Driver they're stuck trying to find their way across North America. Hilarity ensues.
Rated: T - English - Humor - Chapters: 36 - Words: 56,274 - Reviews: 195 - Updated: 4-13-11 - Published: 11-8-09 - Thrall & Varian Wrynn

WARCRAFT WARLOCK by WarGuardian
Classic/Cataclysm Class poem for the Warlocks of WoW. Original/New
Rated: K+ - English - Fantasy/Poetry - Chapters: 1 - Words: 198 - Published: 4-13-11

Saviors of Azeroth » by thehighroller1 reviews
Two brothers, Calonos and Reide, must unite the broken Alliance and the rest of Azeroth to overthrow Verkus and his forces before it's too late. Read and don't be afraid to leave a review!
Rated: T - English - Adventure/Fantasy - Chapters: 8 - Words: 17,409 - Reviews: 7 - Updated: 4-13-11 - Published: 1-23-09
Chapter 1 - A Brighter Future

"Sun's going down," Theldin muttered, looking across the haze-filled horizon that shrouded Westfall in a veil of orange.

Calonos nodded with a smile. "Indeed, this is good. Reide will return soon. We need his report on the rest of Westfall. I want to make sure everything is running smoothly." Both Calonos and Theldin rose up.

"Aye, sir. At this rate, your plan is one step closer to succeeding!" Theldin smiled as he brushed the dust off of his pants.

Calonos looked at him and chuckled. "Ah, but sadly, it will be a long time before my plan will be fully executed. Don't forget, 'King' Verkus is a very clever man and is cautious of just about every little detail of things. He's somewhat paranoid. So we can't do anything now that would make him suspicious of our actions. If he knew that we were lying about the shortage of resources here in Westfall, we all would pay the ultimate price; Death."
Great beginning! Good description in the battle scenes, and a good introduction to the story line. If I could mention one thing, a lot of it read like summary. While there's nothing wrong with that in its place (such as when the boys were training and growing up), some parts you might have been able to flesh out better. Draw us more into the action by showing us what was happening.

Looking forward to reading the second chapter.

keep up the good work, this imagery is outstanding and defines your writing style almost completely. I will be awaiting the next chapter!

This chapter really drew me in; I love the imagery you use. I didn't really notice anything I would say to improve or change, though that may be because - especially in this chapter - I felt more like I was there than I was reading it. Keep up the good work!
Remixing & language development
(Thorne, 2012. ‘Gaming writing, …’)

• **Object-, other-, and self-regulation**

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**Original texts**
- Manga
- Anime
- Film
- Literature

**Readers**
- Reader feedback
- Comments

**Fan fiction authorship**
Gaming texts: L2 implications

• Players’ 1st order actions afforded and constrained by 2nd order resources – quest texts, strategy and lore websites – which are central to the structured emergence of interactivity

• A complex 2nd order semiotic ecology? – yes!
  • High degree of lexical sophistication, lexical diversity, syntactic complexity
  • A significant proportion of both structurally simple and complex sentences
  • Interactive, phatic, and interpersonally engaged discourse
  • Narrative and remix texts: Compelling by volume, creative, interactive, community-related
BERLIN — It usually takes an author decades to reviews, march up the best-seller list and become a book prize. Helene Hegemann, just 17, did it in the space of a few weeks, and despite a savage plagiarism.

In his deliberately provocative — and deeply nihilistic — new book, “Reality Hunger,” the onetime novelist David Shields asserts that fiction “has never seemed less central to the culture’s sense of itself.” He says he’s “bored by out-and-out fabrication, by myself and others; bored by invented plots and invented characters” and much more interested in confession and “reality-based art.” His own book can be taken as Exhibit A in what he calls “recombinant” or appropriation art.
Rewilding foreign language education with place-based learning

Steve Thorne & the 503 Design Collective
Portland State University
Survive the Futurepast
• Game played on GPS-enabled Apple iPhone (ARISgame.org)

• Opening screen

• Game playable in French, English, and Spanish

Greetings, buenos días, et bonjour! Select your language below!

Tap to Continue
Locative learning/AR/ChronoOps

Narrative: “The future is imperiled due to environmental degradation. You (player) are an agent from the year 2070 who comes back in time to the present. Your mission is to explore the ‘simultaneous dawn and dusk’ of green power and green environmental practices that could have, and may yet, save your world”

Learning through performing roles/identities, out in the world, that extend beyond that of “student” (agent, spy, detective, reporter)

Sustainability a PDX-relevant theme, + procedural rhetoric (Bogost, 2007): “the practice of using processes persuasively”

Designing for interactivity: simple game mechanics → complex languaging behaviors in interface with 2nd order language
Players navigate city using googlemaps and receive sound alerts when they enter particular locations.

Players are “pushed” texts/media (some of which is “super authentic”) and quests when in location (see bottom icons).

Game can be played in pairs, small groups, or potentially alone.

L1 & FLs!

External web resources are being designed to provide language support.
Sensory Overload

Look southeast of here. You will see what I can tell you with 95.4% certainty is a point of interest. I sense an anomalous heat signature from...

• Image pushed to players to help them locate a distant solar array. Text message accompanies the image (below)
Language production --
Notebook feature:

- Bread-crumbing & guerilla reportage

- As players move through the city they can annotate and report on their experience by taking photos, writing notes, and recording voice and/or video

- These media (text/image/voice/video) are stored and inform future players’ experience
Great! Your goal is to explore the Portland State University campus and find 5 examples of "green" technology in the year 2013. You will need to record information about the current technology that is used at PSU. I will then send this information to the agents who are living in the year 2070.
1: Neuberger Hall Bike Parking

There are more than 25 bike parking areas on the PSU campus. What are some of the advantages or disadvantages of riding a bike to school? Record your answer by creating a text, audio, or video note within the game’s notebook. Name the note "Note 1".

Tap To Continue
This is where electric cars can be charged. ***Why do you think electric cars are good for the environment? *** Record your answer in the game’s notebook. Name the note "Note 3".

Tap To Continue
ELECTRIC VEHICLE PARKING

ONLY WHILE CHARGING
All hours All days
The toilets in the Academic and Student Recreation Center (ASRC) flush with rainwater collected from the roof. ***What are some other ways that rainwater can be used?*** Record your answer in the game’s notebook. Name the note "Note 4".

Tap To Continue
The Portland Streetcar, two MAX light rail lines, and many buses stop near the Urban Plaza. The Portland Streetcar is free for all PSU students, with your PSU identification card.

***What form of transportation do you use when you travel to school?***

Record your answer in the game’s notebook. Name the note "Note 5".

Tap To Continue
• Players return to class

• In-class debrief

• Preparation for collaborative oral presentations using images and/or video gathered while “on mission”

• Using gathered media, follow-up written work, multi-media authoring, new AR game creation(!)

You did it! By exploring the green technology at PSU, you have saved the future of our planet.
Why AR?

“The voyage of discovery is not in seeking new landscapes but in having new eyes” (Marcel Proust, in Schell 2008, p. xxv).

Get out of the classroom and away from ‘language’ as an object and toward interactivity

Engagement in the physical world—embodied, mobile, experiential, and potentially community based (Holden & Sykes, 2011, 2013)

Game narrative information/semiosis/action is laminated over place, remediating space, purpose, meaning, and action

Non-dichotomous relationship between game designers and players, with players creating aspects of future experience (Squire et al 2009; Thorne 2011, 2012)
Ecological shift in how digital mediation, cognition/action and L2 development are related

- Semiotically rich experience, then, forms the “the raw materials out of which signs grow, and from which language emerges” (van Lier, 2004: 63)
- Developing a pedagogy of “mediated authenticity” rooted in rich/thick exposure to ecologically aligned 2nd order patterns
- Move from ‘the dead hand of [communicative] competence’ (Geertz, 1973:88) to semiotic agility – the capacity for shifting “rapidly and fluently between and among semiotic worlds” (Prior, 2010: 233)
- Goal of foreign language education? → catalyzing the development of anticipatory dispositions that enable complex, nuanced, recipient-aware, nimble and improvisational communicative capacities (Thorne, 2011)
Thanks

Articles referenced available here:
https://sites.google.com/site/stevenlthorne/

Steven L. Thorne
Portland State University
& University of Groningen