

Language development during interstellar travel

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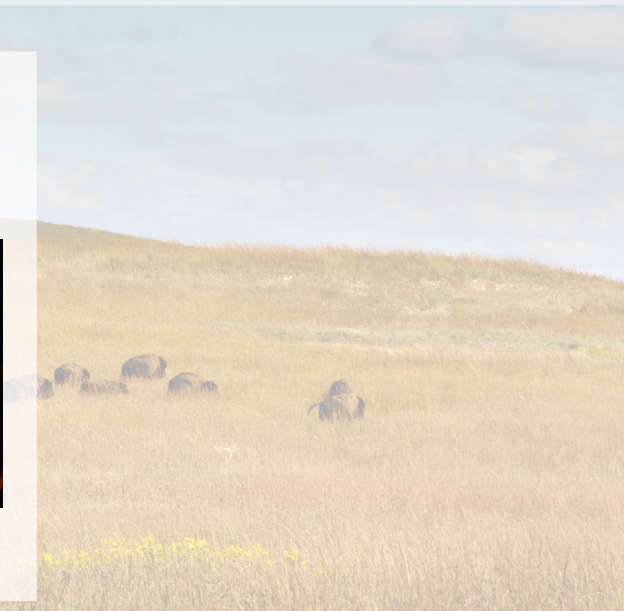
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Thinking about language in space

When we think of language and long-term space travel



Thinking about language in space

When we think of language and long-term space travel



But what will happen to the human language(s) on board?

We know that language will change

Interstellar travel is a great environment for shift

No predicting how or how much language will change

Looking at Earth-bound examples, we can prepare for various outcomes

We recommend making sure the crew is prepared

Potential problems and issues

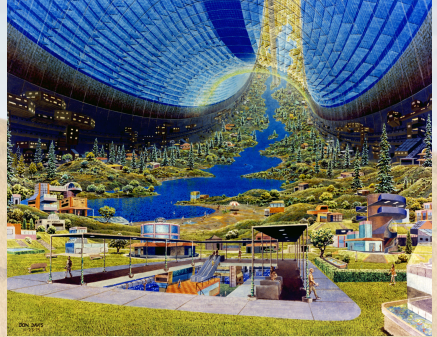
Lower ability to communicate with home base

Changes will compound as each new vessel arrives

Space colonies will continue language development

How will multilingualism affect things?

Not assuming particular mission parameters



The nature of language change

What is language change?

How does it work?

How fast does it happen?

How predictable is it?



How languages change

The nature of language change

Languages are systems
(or groups of systems)

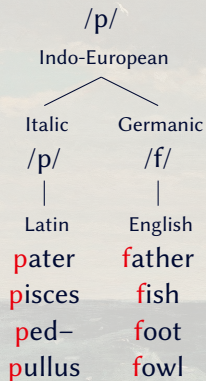
Dialects are varieties of a language tied to a
socially significant group

Most language change is systematic

It occurs throughout the grammar

It has numerous exceptions

sound structures



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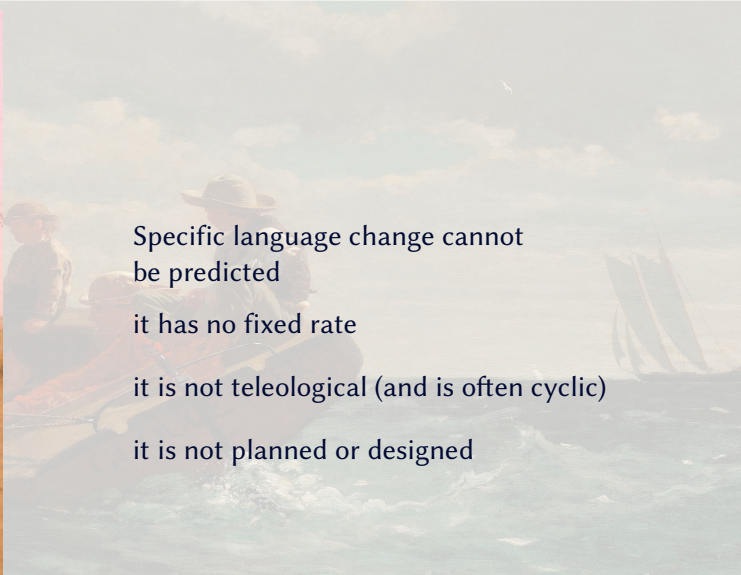
Subject-Object-Verb (SOV) → Subject-Verb-Object
(SVO)

þæt ic þas boc awende
that I this book translate
'that I translate this book'

With this ring, I thee wed
One swallow does not a summer make

Predicting language change

The nature of language change



Specific language change cannot
be predicted

it has no fixed rate

it is not teleological (and is often cyclic)

it is not planned or designed

Change can be pretty quick

The nature of language change

Some major changes can be relatively quick

Great Vowel Shift: 1400-1600

progressive passive: since 1800

My house is currently building →

My house is currently being built

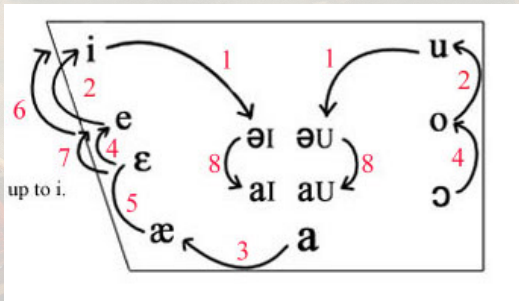
get as helping verb: since 1850

my child got promoted, She got angry

Northern Cities Vowel Shift: since 1930s

Uptalk: since 1970s

(sidenote: uptalk is **not** a question intonation!)



credit: <http://facweb.furman.edu/rmenzer/gvs/what.htm>

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Social factors in language change

The nature of language change

The rate and extent of change often depends on social factors



languages diverge due to lack of contact

might converge toward other communities

especially if they're smaller and more isolated

change driven partially by language identity

Language change in exploratory contexts

long space voyage: ideal environment
for language change

relatively small group
isolated from home
forming a new community

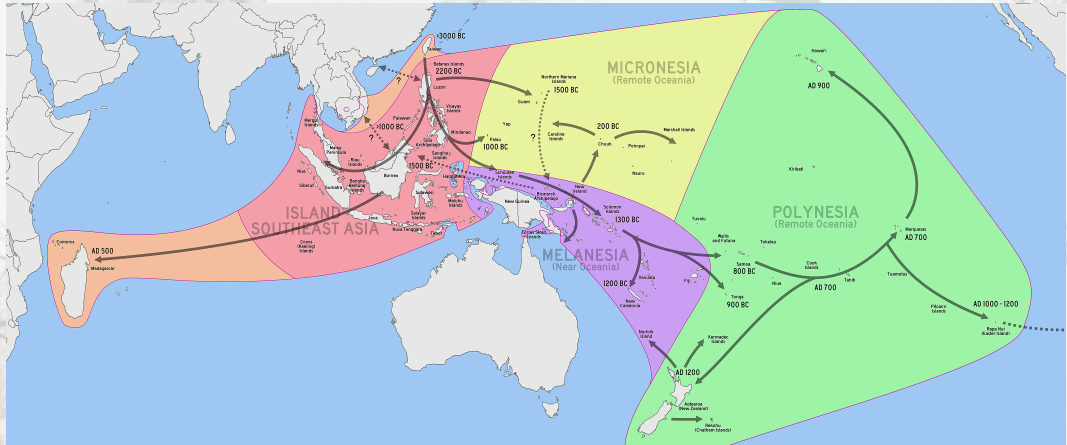
but: no real-world examples to learn from
similar cases on Earth



Oceanic settlement

Language change in exploratory contexts

Austronesian languages → Polynesian languages (isolated; little outside influence)
Malagasy (not isolated; major influence from Bantu)
Indies (modern Indonesian, Malay, Tagalog, *et al.*)



19th-century colonization

Language change in exploratory contexts

New Zealand English

Large numbers of English speakers
mid 1800s

relative isolation → convergence

in 3 generations, a new dialect
(koinéization)

dominant community of the area



19th-century colonization

Language change in exploratory contexts



German-speaking colonists in Texas
(1840s – World War I)

Dialects merged into new variety
(Texas German)

Koinéization incomplete

Perhaps due to minority status

What we can expect

Language change in exploratory contexts

Dialects on board will begin to merge

Then a new dialect will emerge

Eventually enough shift → a new language

Could take several generations
or hundreds of years



Considerations for modern exploration

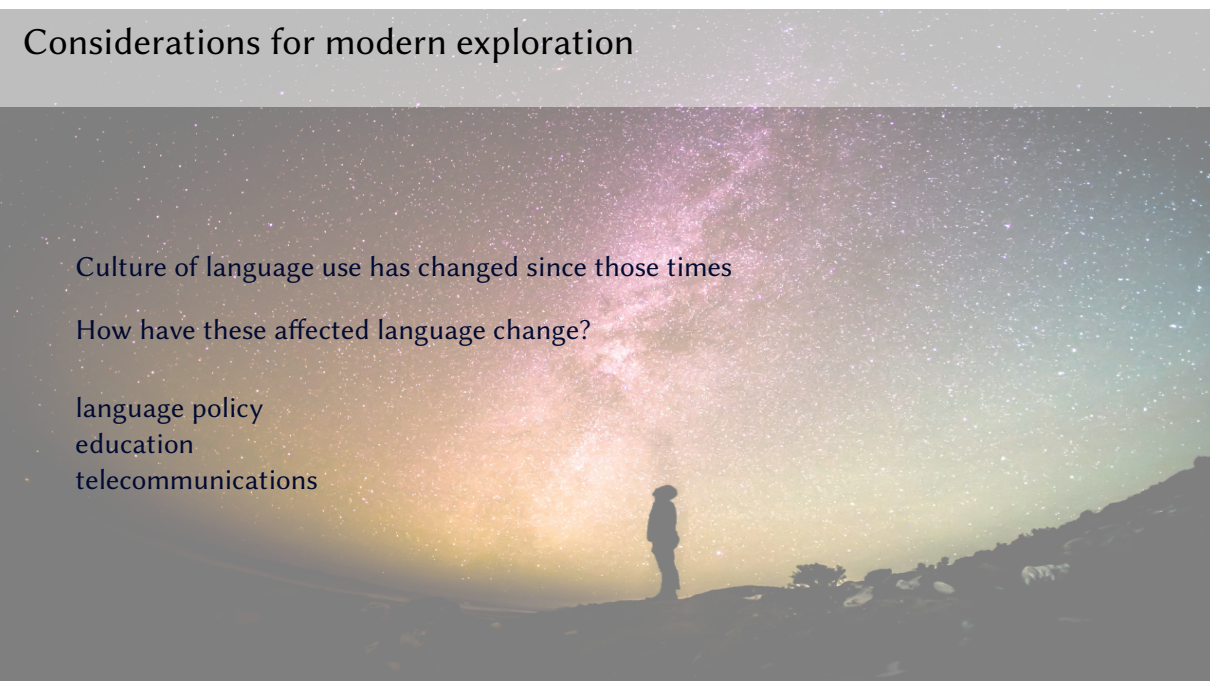
Culture of language use has changed since those times

How have these affected language change?

language policy

education

telecommunications



Language policy

Considerations for modern exploration

internationalization → some common language(s) of use

lingua franca

official language(s)

translations



Language policy

Considerations for modern exploration

internationalization → some common language(s) of use

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Without explicit policy, conventions emerge, but confusion can occur

Education

Considerations for modern exploration



children crucial for language acquisition & change

education promotes particular languages/dialects

compulsory nature strengthens this promotion

Education

Considerations for modern exploration

it also promotes a prestige variety

change slows...in *that* variety

often not used in spoken life

change continues

Earth English $\neq$ Vessel English

(1) 'When did the vessel arrive?'

Literary French:

Quand arriva-t-il le vaisseau?

Spoken French:

Il est arrivé quand, le vaisseau?

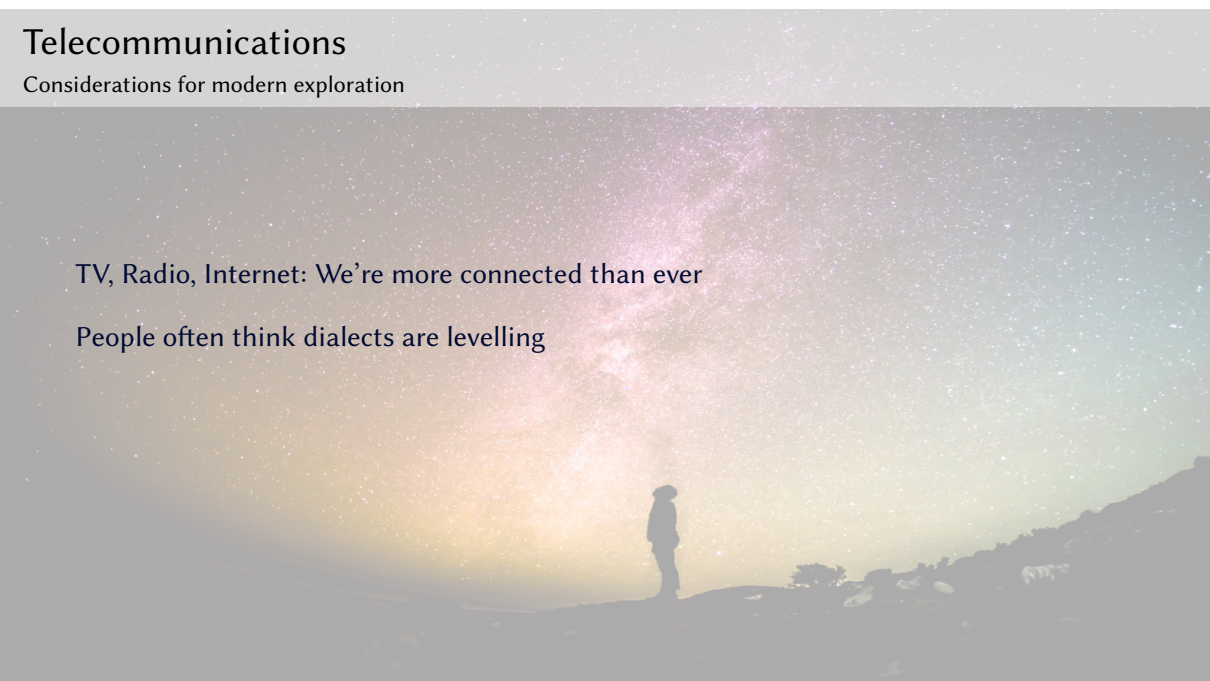


Telecommunications

Considerations for modern exploration

TV, Radio, Internet: We're more connected than ever

People often think dialects are levelling



Telecommunications

Considerations for modern exploration

TV, Radio, Internet: We're more connected than ever

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But dialects are *diverging* more

Markers of social identity in a homogenized culture



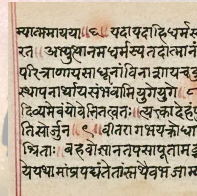
Telecommunications

Considerations for modern exploration

ship-bound dialects will emerge

distance → less communication with Earth

Earth languages could be limited to ritual



Multilingualism on board



Ensuring crew communication

Multilingualism on board

Automatic translators = pipe dream

policy will be required

multilingualism is a virtue now

translate everything (EU)?

working languages (UN)?



Sign languages

Multilingualism on board



Congenital hearing loss : $>2/1,000$ births

Sign language will be required

Full languages distinct from spoken (American SL $\neq$ British SL)

Can be acquired, if people are using them

These change too!

Conclusion

Recaps and recommendations

Long-term voyage or colonization

Crisp predictions impossible

But change is inevitable

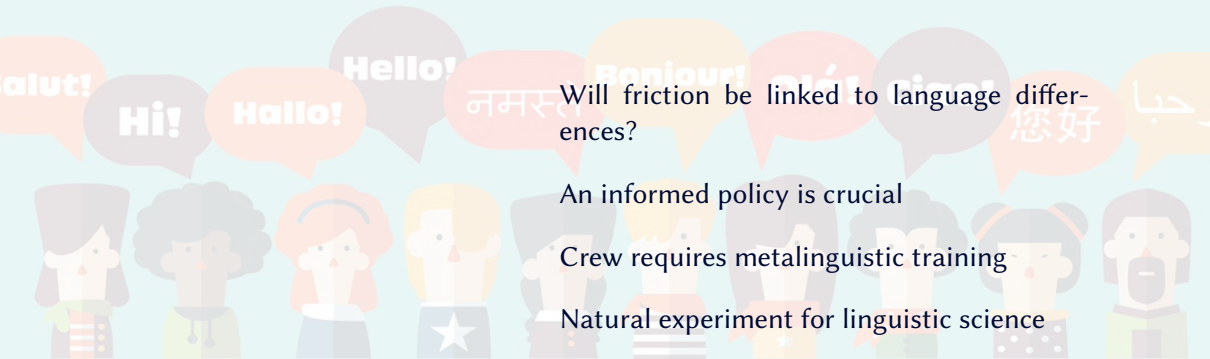
Language will diverge from Earth

Each crew/colony will diverge in its own way



Conclusion

Recaps and recommendations



Will friction be linked to language differences?

An informed policy is crucial

Crew requires metalinguistic training

Natural experiment for linguistic science

This is the end of the talk

Thank you!

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