A language based model of reading

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Reading genre and register
In this problem an oracle computes a function $f$ on the dihedral group $D_N$ which is invariant under a hidden reflection in $D_N$. By contrast the classical query complexity of DHSP is $O(\sqrt{N})$. The algorithm also applies to the hidden shift problem for an arbitrary finitely generated abelian group. The algorithm begins with the quantum character transform on the group, just as for other hidden subgroup problems. Then it tensors irreducible representations of $D_N$ and extracts summands to obtain target representations. Finally, state tomography on the target representations reveals the hidden subgroup.
Mr Fox crept up the dark tunnel to the mouth of his hole. He poked his long handsome face out into the night air and sniffed once. He moved an inch or two forward and stopped. He sniffed again. He was always especially careful when coming out from his hole. He inched forward a little more. The front half of his body was now in the open.

His black nose twitched from side to side, sniffing and sniffing for the scent of danger. He found none, and he was just about to go trotting forward into the wood when he heard or thought he heard a tiny noise, a soft rustling sound, as though someone had moved a foot ever so gently through a patch of dry leaves.

Mr Fox flattened his body against the ground and lay very still, his ears pricked. He waited a long time, but he heard nothing more.

‘It must have been a field-mouse,’ he told himself, ‘or some other small animal.’

He crept a little further out of the hole . . . then further still. He was almost right out in the open now. He took a last careful look around. The wood was murky and very still. Somewhere in the sky the moon was shining.

Just then, his sharp night-eyes caught a glint of something bright behind a tree not far away. It was a small silver speck of moonlight shining on a polished surface. Mr Fox lay still, watching it. What on earth was it? Now it was moving. It was coming up and up . . . Great heavens! It was the barrel of a gun! Quick as a whip, Mr Fox jumped back into his hole and at that same instant the entire wood seemed to explode around him. Bang-bang! Bang-bang! Bang-bang!

The smoke from the three guns floated upward in the night air. Boggis and Bunce and Bean came out from behind their trees and walked towards the hole. ‘Did we get him?’ said Bean.

One of them shone a flashlight on the hole, and there on the ground, in the circle of light, half in and half out of the hole, lay the poor tattered bloodstained remains of . . . a fox’s tail. Bean picked it up. ‘We got the tail but we missed the fox,’ he said, tossing the thing away.
Reading instances

- all strata instantiate

- phonology
- lexicogrammar
- discourse semantics

system

- text

Reading instances

- all strata instantiate

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Perspectives on instantiation

- cline (genre/register – text type – text – reading)
- coupling (intra/inter-modal)
- commitment (experiential/interpersonal meanings)
...
- consciousness (reading instances)
Reading redundancy
- patterns of patterns of patterns of ...
Instantiation and logogenesis

- ranks and strata unfold at different rates
Reading logogenesis

- recognising unfolding patterns
- expecting patterns to follow
- accumulating needed patterns
- divesting unneeded patterns

- simultaneously at all strata and ranks
- automatically (beneath awareness)
Mr Fox crept up the dark tunnel to the mouth of his hole.
He poked his long handsome face
out into the night air
and sniffed once.

He moved an inch or two forward
and stopped.

He sniffed again.
Reading discourse (activity sequences)

Mr Fox crept up the dark tunnel to the mouth of his hole
poked out into the night air
sniffed once
moved an inch or two forward
stopped
sniffed again
inched forward a little more
was now in the open
twitched from side to side
sniffing and sniffing for the scent of danger
found none
was just about to go trotting forward into the wood
heard a tiny noise
flattened his body against the ground
lay very still
waited a long time
heard nothing more
crept a little further out of the hole . . . then further still
was almost right out in the open
took a last careful look around
Just then, his sharp night-eyes caught a glint of something bright behind a tree not far away. It was a small silver speck of moonlight shining on a polished surface.

Mr Fox lay still, watching it. What on earth was it?

Now it was moving. It was coming up and up . . .

Great heavens!

It was the barrel of a gun!

Quick as a whip, Mr Fox jumped back into his hole

and at that same instant the entire wood seemed to explode around him. Bang-bang! Bang-bang! Bang-bang!
Reading genre (stage-by-stage)

Orientation
Mr Fox crept up the dark tunnel to the mouth of his hole. He poked his long handsome face out into the night air and sniffed once. He moved an inch or two forward and stopped. He sniffed again. He was always especially careful when coming out from his hole. He inched forward a little more. The front half of his body was now in the open.

setting
His black nose twitched from side to side, sniffing and sniffing for the scent of danger. He found none, and he was just about to go trotting forward into the wood when he heard or thought he heard a tiny noise, a soft rustling sound, as though someone had moved a foot ever so gently through a patch of dry leaves.

foreshadowing
Mr Fox flattened his body against the ground and lay very still, his ears pricked. He waited a long time, but he heard nothing more.

re-setting
‘It must have been a field-mouse,’ he told himself, ‘or some other small animal.’

Complication
He crept a little further out of the hole . . . then further still. He was almost right out in the open now. He took a last careful look around. The wood was murky and very still. Somewhere in the sky the moon was shining.

Just then, his sharp night-eyes caught a glint of something bright behind a tree not far away. It was a small silver speck of moonlight shining on a polished surface. Mr Fox lay still, watching it. What on earth was it? Now it was moving. It was coming up and up . . . Great heavens! It was the barrel of a gun! Quick as a whip, Mr Fox jumped back into his hole and at that same instant the entire wood seemed to explode around him. Bang-bang! Bang-bang! Bang-bang!

re-setting
The smoke from the three guns floated upward in the night air. Boggis and Bunce and Bean came out from behind their trees and walked towards the hole. ‘Did we get him?’ said Bean.

twist
One of them shone a flashlight on the hole, and there on the ground, in the circle of light, half in and half out of the hole, lay the poor tattered bloodstained remains of . . . a fox’s tail. Bean picked it up. ‘We got the tail but we missed the fox,’ he said, tossing the thing away.
Reading layers of instantiation

grammar - literal meaning (within the sentence)
discourse - inferential meaning (across the text)
register - interpretive meaning (beyond the text)
genre - “—”

Just then, his sharp night-eyes caught a glint
successive: presumed: Mr Fox only just saw
immediate sees well in the dark
problem
Complication

of something bright behind a tree not far away.
present: thing part of wood
unknown thing hidden close so threatening

It was presumed a small silver speck of moonlight shining on a polished surface.
specify something repeat moon shining
specify silver speck unexpected in wood
can still see it

Mr Fox lay still, watching it. What on earth was it?
repeat presumed engagement
fear Mr Fox’s perspective
reaction
Now it was moving. It was coming up and up . . . presumed
presumed farmers aiming at Mr Fox

problem

Great heavens! It was the barrel of a gun!
engagement + force presumed; repeat gun + part
shock farmers’ gun
reaction problem

Quick as a whip, Mr Fox jumped back into his hole
almost instantly repeat contrast crept presume; repeat hole
narrator’s perspective escaping
reaction

and at that same instant the entire wood seemed to explode
simultaneous presume; rep wood around him.
problem: culminates graduation
presumed guns firing will he escape?
Individuation

reservoir of semiotic resources in culture

repertoires of groups & individuals
All strata individuate
discourse semantics

lexicogrammar

phonology

reservoir

repertoire

reservoir

repertoire

reservoir

repertoire
Instantiation x individuation = readings

Readings

- System
  - Text
- System
  - Text
- System
  - Text
- Reservoir
- Repertoire
- Reservoir
- Repertoire
- Reservoir
- Repertoire

Redundancy

Individuation
Readings

- variations in...

  • comprehension at each stratum and rank
    ‘text decoder’

  • engagement in other lives
    (story genres)
    ‘text participant’

  • acquisition of knowledge
    (factual and procedural genres)
    ‘text user’

  • evaluation of things, texts, social issues, positions
    (arguments & text responses)
    ‘text analyst’
Learning = individuation x instantiation

...by attending to text-in-situation a child construes the code, and by using the code to interpret text s/he construes the culture. Thus for the individual, the code engenders the culture; and this gives a powerful inertia to the transmission process (IFG: xxxi).
He crept a little further out of the hole . . . then further still. He was almost right out in the open now. He took a last careful look around. The wood was murky and very still. Somewhere in the sky the moon was shining.

Just then, his sharp night-eyes caught a glint of something bright behind a tree not far away. It was a small silver speck of moonlight shining on a polished surface. Mr Fox lay still, watching it. What on earth was it?

Now it was moving. It was coming up and up . . . Great heavens! It was the barrel of a gun!

Quick as a whip, Mr Fox jumped back into his hole and at that same instant the entire wood seemed to explode around him. Bang-bang! Bang-bang! Bang-bang!

words within groups
a little further, a last careful look, Just then, his sharp night-eyes, a small silver speck of moonlight, jumped back, the entire wood, seemed to explode

groups within clauses
. . . then further still, Somewhere in the sky, and very still, not far away, on a polished surface, Now, Quick as a whip, at that same instant, around him

clauses and sentences
He was almost right out in the open now; his sharp night-eyes caught a glint; watching it; What on earth was it?; It was coming up and up . . .; Great heavens!; Bang-bang! Bang-bang! Bang-bang!

phases within stages
[problem1] something bright behind a tree... [reaction] Mr Fox lay still...
[problem2] Now it was moving... [reaction] Great heavens!...
[problem3] the entire wood seemed to explode...
He crept out of the hole... He took a look around. The wood was murky. He saw something behind a tree. It was a speck. Mr Fox lay still. It was moving. Mr Fox jumped into his hole and the wood exploded. Bang-bang! Bang-bang!
He crept out of the hole.
He took a look around.
The wood was murky.
The moon was shining.
Then he saw something behind a tree.
It was a speck shining.
Mr Fox lay still.
It was moving.
It was the barrel of a gun.
Mr Fox jumped into his hole and the wood exploded.
1 Prepare for reading the text

- preview genre and field (with less committment)

Remember this is the Complication, where poor old Mr Fox gets shot. Mr Fox had almost climbed right out of his hole, and was looking around. It was dark but the moon was shining. So that’s the setting. Then there’s a little problem that makes Mr Fox worry. He saw something shining behind a tree, and he wondered what it was. Then the problem gets worse because the shiny thing started moving up and up, and he realised it was a gun. He jumped back in his hole as fast as he could, at the same time as the farmers all shot their guns at him.
2 Prepare for reading the sentence

- preview genre and field (with less commitment)

Teacher Prepare sentence

*Now the Complication starts. In the first sentence Mr Fox saw something shining behind a tree. Look at the sentence as I read it. ‘Just then, his sharp night-eyes caught a glint of something bright behind a tree not far away.’*
3 Prepare and elaborate wordings

- prepare with less commitment (literal or inferential)
- elaborate with more commitment (inferential or interpretive)

**Prepare**

*That sentence starts with two words that mean at the same time.*

**Focus**

*[student name]*. Can you see those two words?

**Identify**

Just then.

**Affirm**

Exactly.

**Direct**

Let’s highlight Just then.

**Elaborate**

Just then means just when Mr Fox took his last careful look around.

**Teacher**

Prepare

Then it tells us how he could see.

**Focus**

*[student name]* Can you see what his eyes were like?

**Identify**

Sharp night-eyes

**Affirm**

Excellent.

**Direct**

Highlight sharp night-eyes.

**Elaborate**

Foxes have special eyes that can see at night.
Teacher | Focus | **Now what are the words that mean his eyes saw something?** [student name]
---|---|---
Student | Identify | *Caught a glint.*
Teacher | Affirm | *Brilliant.*
Teacher | Elaborate | *A glint is a little bit of light. If you catch a glint it means you just noticed it. So it must have been just a tiny little bit of light.*

Teacher | Prepare | *Then it says what he caught a glint of – something bright – and then where it was.*
---|---|---
Student | Focus | [student name] *Can you see where it was?*
Student | Identify | *Behind a tree not far away*
Teacher | Affirm | *Right.*
Teacher | Direct | *Let’s highlight behind a tree not far away.*

**Students** | **Teacher** | **Elaborate**
---|---|---
**Students** | Focus | *Mr Fox doesn’t know what it is, but we know.*
**Students** | Propose | *Who’s hiding behind the trees not far away?*
**Teachers** | Affirm | *The farmers. Boggis, Bunce, Bean.*
**Teachers** | Elaborate | *That’s exactly right.*
**Teachers** | | *So that makes it more scary, doesn’t it?*
**Teacher** Prepare  *The next sentence describes more about what he saw. Look at the sentence.*

‘It was a small silver speck of moonlight shining on a polished surface.’

**Prepare**  

<table>
<thead>
<tr>
<th>Focus</th>
<th>[student name]. Can you see the word that means a tiny bit of moonlight?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify</td>
<td>Speck.</td>
</tr>
</tbody>
</table>

**Teacher** Affirm  

| Fantastic. |

**Teacher** Direct  

| Let’s do speck. |

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**Teacher** Prepare  

| And that speck has two qualities. |

**Student** Focus  

| [student name]. Can you see the two qualities? It was a...? |

**Student** Identify  

| Small silver speck. |

**Student** Affirm  

| Perfect. |

**Student** Direct  

| Let’s highlight the whole lot - small silver speck of moonlight. |

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**Teacher** Prepare  

| At the end it says what the moonlight was shining on. |

**Student** Focus  

| [student name]. Can you see what it was shining on? |

**Student** Identify  

| A polished surface. |

**Student** Affirm  

| Exactly. |

**Student** Direct  

| Highlight polished surface. |

**Student** Elaborate  

| Mr Fox didn’t expect to see a polished surface in the middle of the wood, so it would worry him. So that’s the first problem, he saw something that worried him. |
| Teacher | Prepare | *Now Mr Fox reacts. Look as I read it. ‘Mr Fox lay still, watching it. What on earth was it?’*
|---|---|---|
|  | sentence | *What on earth was it?*
| **Student** | **Focus** | [*student name*] What are the two things he did?
|  | **Identify** | Lay still, watching it.
| **Teacher** | **Affirm** | Great.
|  | **Direct** | Highlight all that lay still, watching it.
| **Prepare** | | *He doesn’t know what it is.*
| **Student** | **Focus** | [*student name*]. What does he ask himself?
|  | **Identify** | What on earth was it?
| **Teacher** | **Affirm** | Right.
|  | **Direct** | Just highlight What on earth.
| **Elaborate** | | *So he couldn’t work out what it was.*
Now the problem gets worse. Watching? ‘Now it was moving. It was coming up and up...’

So it was doing two things.

What’s the first thing it was doing? [student name]
Moving.

Exactly.

Highlight moving.

[student name]. What the second thing it was doing?
Coming up and up.

Fantastic.

Highlight Coming up and up.
It’s coming up and up because the farmer is raising his gun to aim at Mr Fox. Then there are those three dots that mean time is passing while Mr Fox is looking and thinking. Can you see those three dots?
Now Mr Fox reacts when he realises what it is. Look as I read it. ‘Great heavens! It was the barrel of a gun!’

What are the two words he says to himself?

Great heavens!

Fantastic.

Let’s highlight Great heavens!

He’s so surprised he exclaims to himself. Can you see the exclamation mark at the end? That’s like saying Oh my god! We call those exclamations.

What does he realise it is?

The barrel of a gun.

Exactly.

Highlight barrel of a gun.

So that was the polished surface the moonlight glinted on.

And what’s that sentence end with?

Exclamation mark.

Right.

That tells us how surprised he is.

How else would he be feeling?

Scared.

Exactly right.

He’d be really scared.
Now the next sentence starts with another reaction, just as the farmers fire their guns. Look at the sentence. ‘Quick as a whip, Mr Fox jumped back into his hole and at that same instant the entire wood seemed to explode around him. Bang-bang! Bang-bang!’

[student name] How fast did he jump?
Quick as a whip.
Brilliant.
Let’s highlight Quick as a whip.
Quick as whip means really really fast. Faster than you can see.
So he jumped back in his hole. Then it says at the same time.
[student name] Can you see the words that mean at the same time?
That same instant.
Excellent.
Highlight same instant.
Same instant means exactly the same time.
What happened? [student name]
The wood seemed to explode.
Fantastic.
How much of the wood?
The entire wood.
Exactly.
Let’s do the whole lot - entire wood seemed to explode.
Mr Fox doesn’t understand what’s happening. But we know.
What is happening?
Farmers are shooting.
Exactly right.
They’re all shooting their big shotguns at the same time. So to Mr Fox it seems like one big loud explosion.