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React Compiler
how can you help me?__

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Hi 👋, I'm **Luca**!_



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Why are we here to talk about React Compiler?




Long story short
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React Story_

1. **2013: Birth of React**
   Invented to fix AngularJS

2. **2019: React Hooks**
   Invented to fix React's

3. **2021: React Suspense**
   Invented to fix React again

4. **2024: React Compiler**
   Invented to fix React again again

2019: React Hooks

1. **memo**
   Avoid re-rendering

2. **useMemo**
   Optimize expensive calculations

3. **useCallback**
   Memoize callback functions



The Burden of Manual Memoization_

Parent State Changes
Triggers re-render of Parent

ALL Children Re-render
Even if props/state didn't change

Slow UI
Causes slow UI updates


Let's see it in action

We have a new hero in town

React Compiler



Install it_

```
npm install -D babel-plugin-react-compiler@latest
```

1

Enable it_

```
import react from '@vitejs/plugin-react'
import { defineConfig } from 'vite'

export default defineConfig({
  plugins: [
    react({
      babel: {
        plugins: [['babel-plugin-react-compiler']],
      },
    }),
  ],
})
```

Let's be precise_

It's not a real Compiler
!? another mistake?

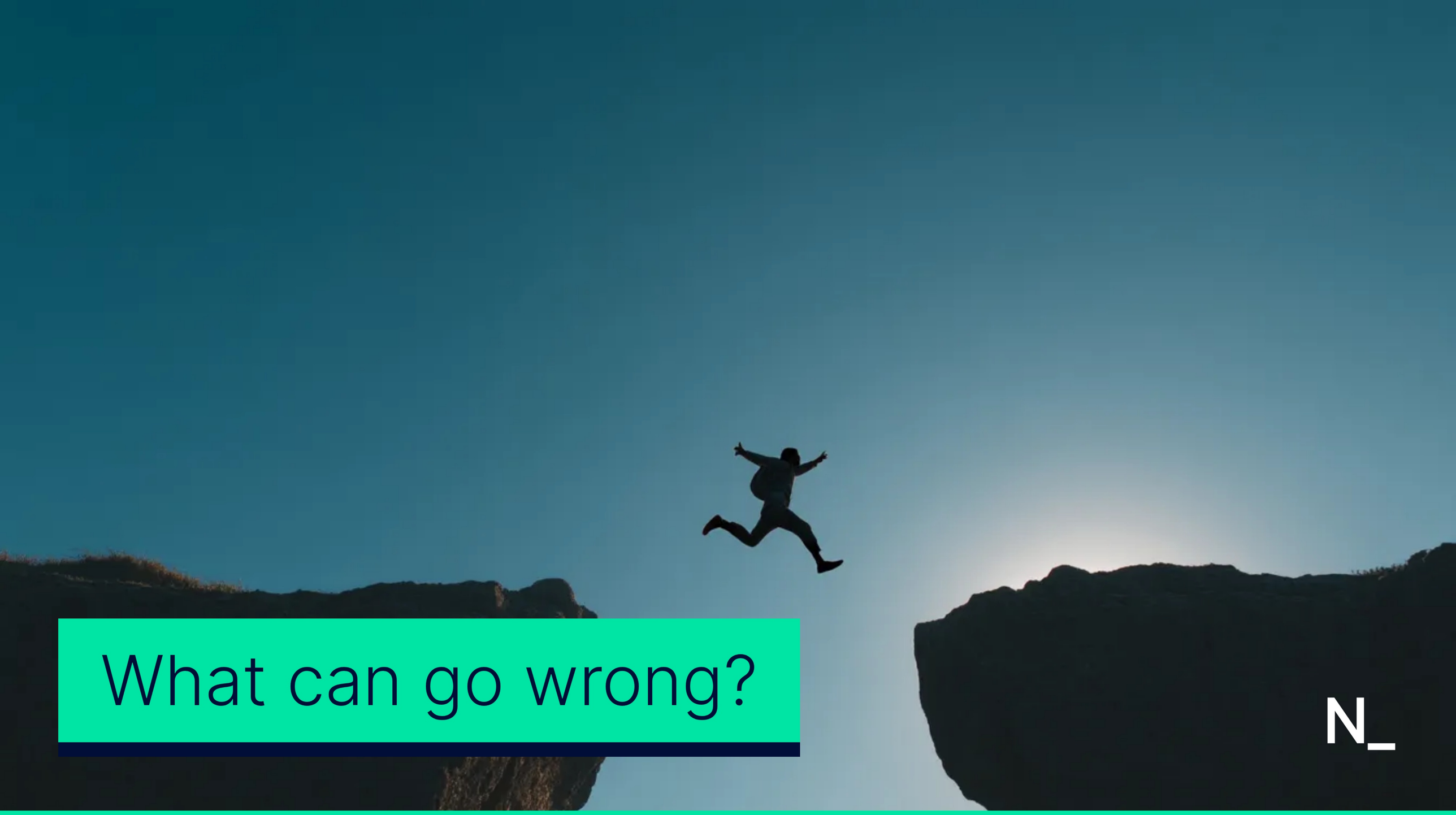
It's a Babel Plugin
Transforms your code

Adds optimizations
Like auto-memoization





Let's see it in action



What can go wrong?

Caveats & Best Practices

1. **The compiler isn't magic**

2. **It relies on you following the Rules of React.**

3. **State is Immutable.**



Check React Compiler is working properly

Health check npm script_

```
npx react-compiler-healthcheck@latest
```



ESLint React Hooks plugin_

```
npm i -D eslint-plugin-react-hooks@latest
```



Check the build artifacts_

```
1   ...
2   Symbol.for("react.memo_cache_sentinel")
3   ...
```





Let's see it in action



This is cool but...

It works well for greenfield projects


What about legacy code?

Incremental Adoption Strategy

Babel overrides

Apply the compiler to specific directories

Opt-in with “use memo”

Only compile components that explicitly opt in

Runtime gating

Control compilation with feature flags



Let's see it in action

Conclusion 1/2

React Compiler is here to help you

No more manual memoization

React Compiler is not magic

Follow the Rules of React

React Compiler is just a tool

‼ Test, measure, verify the output ‼

Conclusion 2/2

React Compiler ~~still in RC~~ is HERE

It's stable ~~but not perfect~~

Give it a try!

Start using it in your projects

Let's be precise_

This is my opinion about React Compiler



Links_

React Compiler
https://react.dev/learn/react-compiler/

I tried React Compiler today, and guess what... 😉
https://www.developerway.com/posts/i-tried-react-compiler

Videos 1/2_

React Compiler Explained in 3 Minutes (Goodbye, re-renders)
https://www.youtube.com/watch?v=40osg7LoShc

React Compiler Internals
https://www.youtube.com/watch?v=Pw8w2O5Y0no

Ready for everyday use?
https://www.youtube.com/watch?v=guKq_qumTV8

Videos 2/2

The Problem With the React Compiler
https://www.youtube.com/watch?v=14MZJtGAiVs

**They made React great again? **
https://www.youtube.com/watch?v=4k6Xgjqkad4



Thank you!

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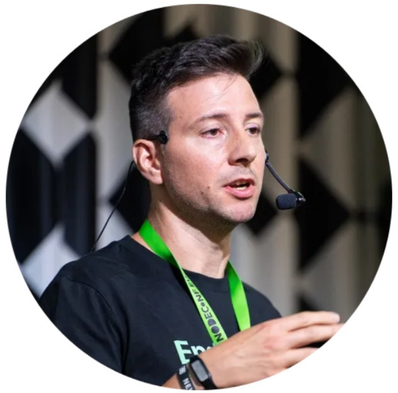
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GitHub Repo_

React Compiler Talk

Explore the code and examples

Bye Bye , I'm **Luca**!_



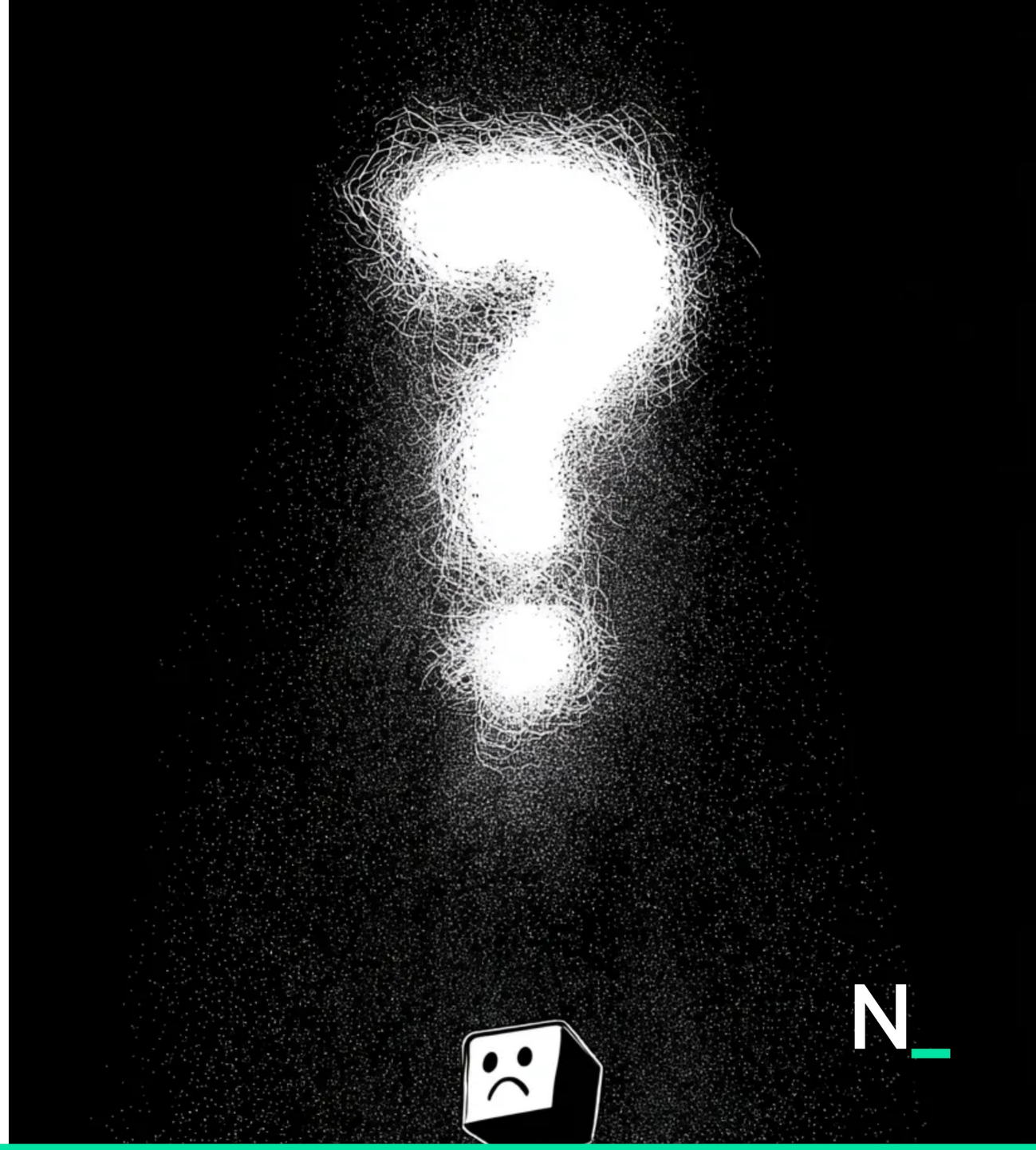
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Questions



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