

# GitHub Copilot PR Review – Behavior Report

## Question 1: Will GitHub Copilot PR Review Eventually Stop Suggesting Changes?

### Observation:

- Even after applying all suggested changes from Copilot and re-running PR reviews, the tool continues to recommend ~8 changes each time.
- This cycle has been repeated 31 times, with a local Copilot scan showing a 94% code quality score.

### Analysis:

#### 1. No Memory Across PRs

- Copilot reviews each pull request independently.
- It does not remember past feedback or whether you have already acted on similar suggestions.

#### 2. Subjective and Non-Deterministic

- Suggestions are based on AI pattern matching and best practices.
- Fixing one set of suggestions can cause new recommendations to appear.

#### 3. No Defined “End State”

- Unlike a rule-based linter, Copilot has no fixed set of rules to “pass.”
- It can always propose stylistic or alternative solutions, even if the current code is perfectly functional.

#### 4. Diminishing Returns

- At 94% quality, remaining suggestions are likely stylistic or micro-optimizations.
- Iterating indefinitely will never fully stop new suggestions.

### Conclusion:

Copilot PR review will not naturally stop suggesting changes. A manual cutoff point should be set once no critical issues remain.

### Recommendation:

- Use rule-based linters (ESLint, Pylint, Flake8, etc.) for a true “completion” state.
- Treat Copilot PR review as an advisory tool rather than a pass/fail gate.

## Question 2: Why Does Copilot PR Review Skip Some Files?

### Observation:

- When reviewing an entire codebase (e.g., 105 files), only ~90 files receive suggestions.
- Skipped files are excluded from review output.

### Analysis:

#### 1. Diff-Based Review

- Copilot only reviews files that have changes in the current pull request compared to the base branch.
- Unchanged files are skipped.

#### 2. Token and Size Limits

- AI models have a maximum context window and cannot load all files in very large PRs.
- GitHub may chunk large diffs, and some files may be excluded in these chunks.

#### 3. File Type Filtering

- Non-source files (binary, auto-generated, or trivial changes) may be ignored.

#### 4. GitHub Diff Display Limits

- GitHub has internal limits (~20,000 changed lines or ~300 files per PR).
- Files hidden or collapsed by GitHub are also skipped by Copilot.

### Conclusion:

Copilot PR review skips files due to its diff-based nature, size limits, and GitHub's own file/diff constraints.

### Recommendation:

- Use smaller, targeted PRs to ensure all relevant files are reviewed.
  - For full-repo analysis, use Copilot CLI locally or artificially touch unchanged files to include them in the diff.
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