## Introduction

In the IEEE Computer article Fishman and Kemerer start off by stating that “although Object-Oriented (OO) as a programming discipline go back two decades, it’s only in the last few years that object-oriented analysis (OOA) and object-oriented design (OOD) methodologies have begun to emerge” [1]. A key take-away from this statement is that their primary focus in this article is on the merits/demerits of the methodology of analysis and design of Object-Oriented systems as opposed to a discussion of OO as a programming paradigm.

## Evolutionary or Revolutionary

A fundamental point they bring up was the early debate on whether OO methodology was evolutionary (synthesis) or revolutionary. In their article, they follow up by stating that if it was revolutionary then “revolutionaries believe it is a radical change that renders conventional methodologies and ways of thinking about design obsolete” [1], in contrast, in their opinion, the synthesists “see object orientation as simply an accumulation of sound engineering principles that adopters can graft onto their existing methodologies with relative ease’ [1].

When we consider the two points of views, synthesis and revolutionary, we can safely assume that the approach and adoption to OO design and methodologies would also be reflected by these points of views.

## Factors to Consider

The authors state that there are practical implications to be considered depending on the point of view that is taken. They state that “One of the most important assessments a company must make in considering the adoption of a technical innovation falls on the incremental-radical continuum in relation to its own current practice” [1]. The authors believe that if OO is considered as a radical change then it would have a negative impact on its adoption [1] because management would have to consider the greater expense and risk of a new and radical approach. However, if it is considered evolutionary, then existing tools and technologies could be retrofitted to accommodate OO analysis and design methodologies, and it is more likely to be adopted in organizations. The authors feel that “the radical-versus-incremental debate is crucial to assessing the future of object orientation and formulating a transition strategy” [1].

## Comparison with Existing Methodol**ogies**

The authors then make a comparison between conventional design and analysis with OO design and analysis. In their comparison of methodologies they distinguish between analysis and design. In their opinion “object-oriented analysis methodologies reviewed here present a radical change over process-oriented methodologies such as DeMarco structured analysis but only an incremental change over data-oriented methodologies” [1]. The reason they provide is that process-oriented methodologies places less emphasis on inherent properties of objects and leads to a modeling process that is orthogonal to the essential principles of object orientation, whereas, in their opinion, data-oriented methodologies rely heavily on the same basic technique of “information modeling” as OOA methodologies [1].

From a design perspective, they conclude that OOD is a radical change from both process-oriented and data-oriented methodologies [1]. In their opinion “OOD methodologies model several important dimensions of a target system that is not addressed by a conventional methodology” [1]. The dimensions they consider are the fundamental artifacts of OOD that includes, the detailed definition of classes and inheritance, class and object relationships, encapsulated operations and message connections. Stated differently the functional, process oriented design methodologies did not have these concepts to consider in their design artifacts.

**REFERENCES**

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| [1] | R. G. Fichman and C. F. Kemerer, "Object-Oriented and Conventional Analysis and Design Methodologies," *IEEE Computer,* pp. 22-39, October 1992. |