Turning Function Calls Into Animations

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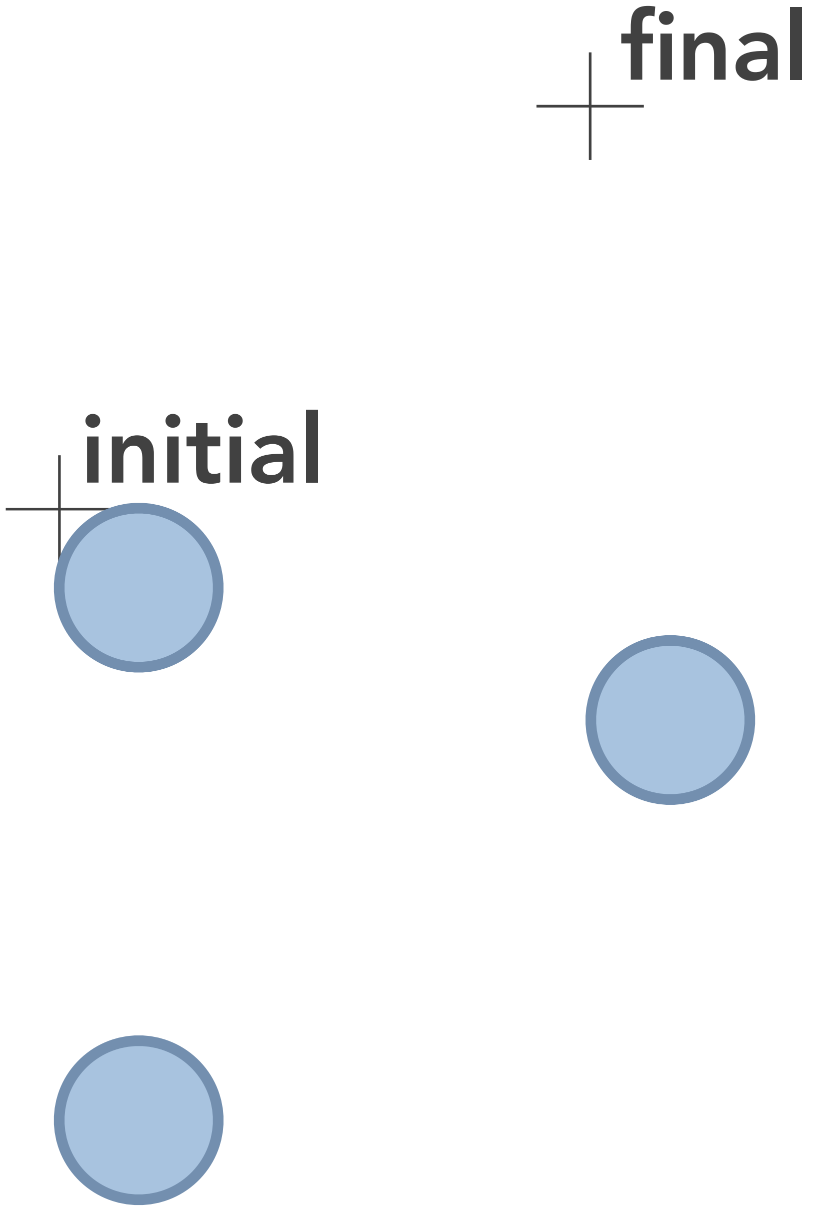
Animated transitions



```
QPropertyAnimation a(ball, "geometry");
a.setDuration(4000);
a.setEndValue(QRect(100, -75, 30, 30));
a.start();
```

Gap

```
ball.setGeometry(QRect(100, -75, 30, 30));
```

Extending animations

```
QPropertyAnimation a(myObject, "myProperty");
a.setDuration(4000);
a.setEndValue(valueWithMyType);
a.start();
```

New object type

New property (title, matrixTransform, audioVolume, ...)

New value type (string, matrix, graph, ...)

Extending animations

```
QPropertyAnimation a(myObject, "myProperty");
a.setDuration(4000);
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a.start();
```

➡ Subclassing a framework's class

➡ Filling some meta-data

➡ Providing a custom interpolation function

Programming animations

Cumbersome syntaxes

Incoherent with non-animated equivalents

Lack of flexibility to include new objects/properties/types

Problem:
How can we build a flexible animation system, *coherent* with simple transitions?

Related work

```
object.transition()
   .duration(2000)
   .attr("property", target);
```

D3 (Javascript)

```
TweenLite.to(object, 2, {property: target});
```

GSAP (Javascript)

```
object.property = target
```

Core Animation (Swift)

Related work

```
object.transition()
   .duration(2000)
   .attr("property", target);
```

only selected methods

```
TweenLite.to(object, 2, {property: target});
```

everything *but* selected methods

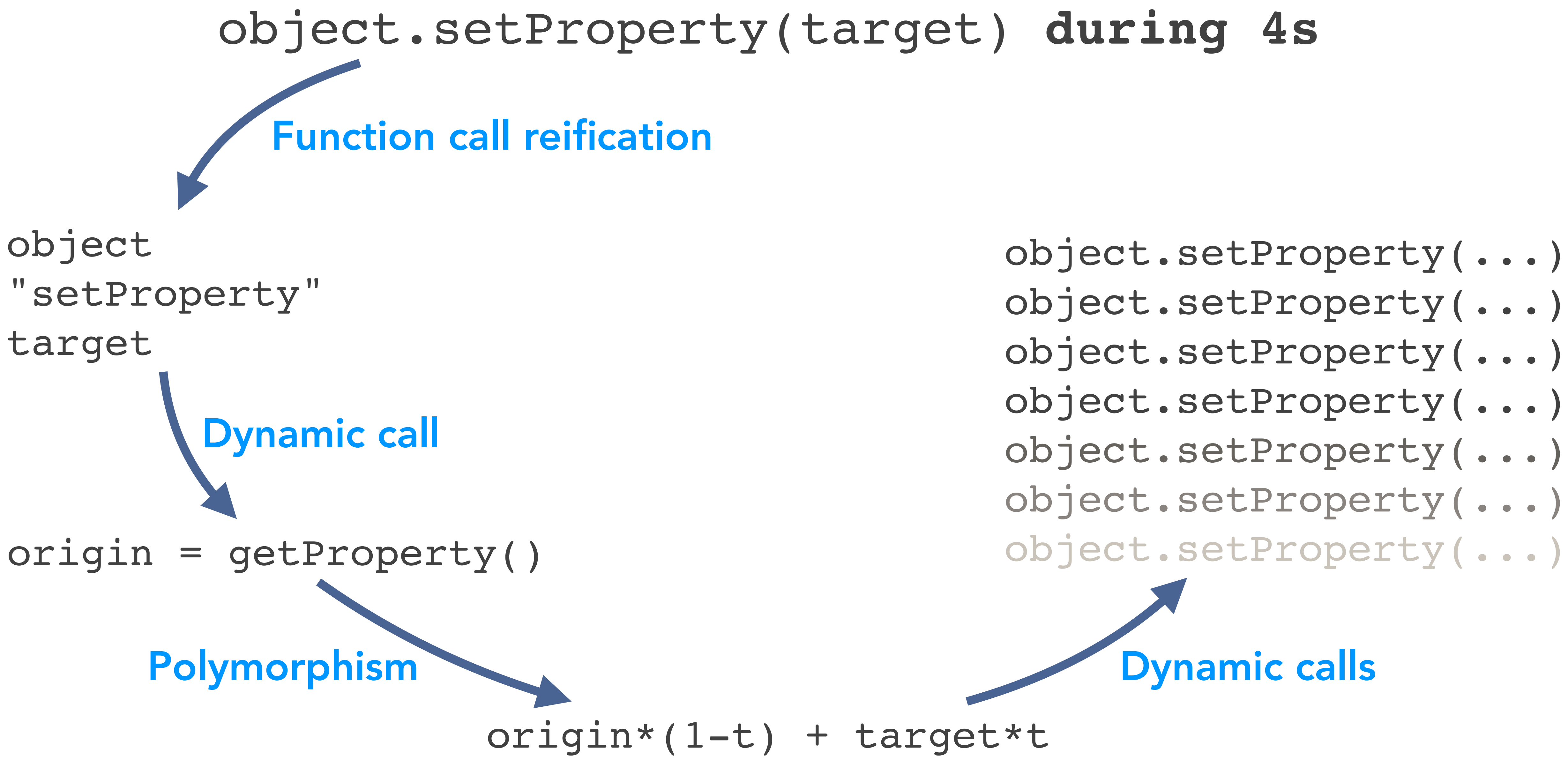
```
object.property = target
```

cannot pass options

Proposal

```
object.setProperty(target) during 4s
```

Proposal



```
object.setProperty(target) during 4s
```

Function call reification

```
object
"setProperty"
target
```

Dynamic call

```
origin = getProperty()
```

Polymorphism

```
origin*(1-t) + target*t
```

Dynamic calls

```
object.setProperty(...)
object.setProperty(...)
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object.setProperty(...)
object.setProperty(...)
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object.setProperty(...)
```

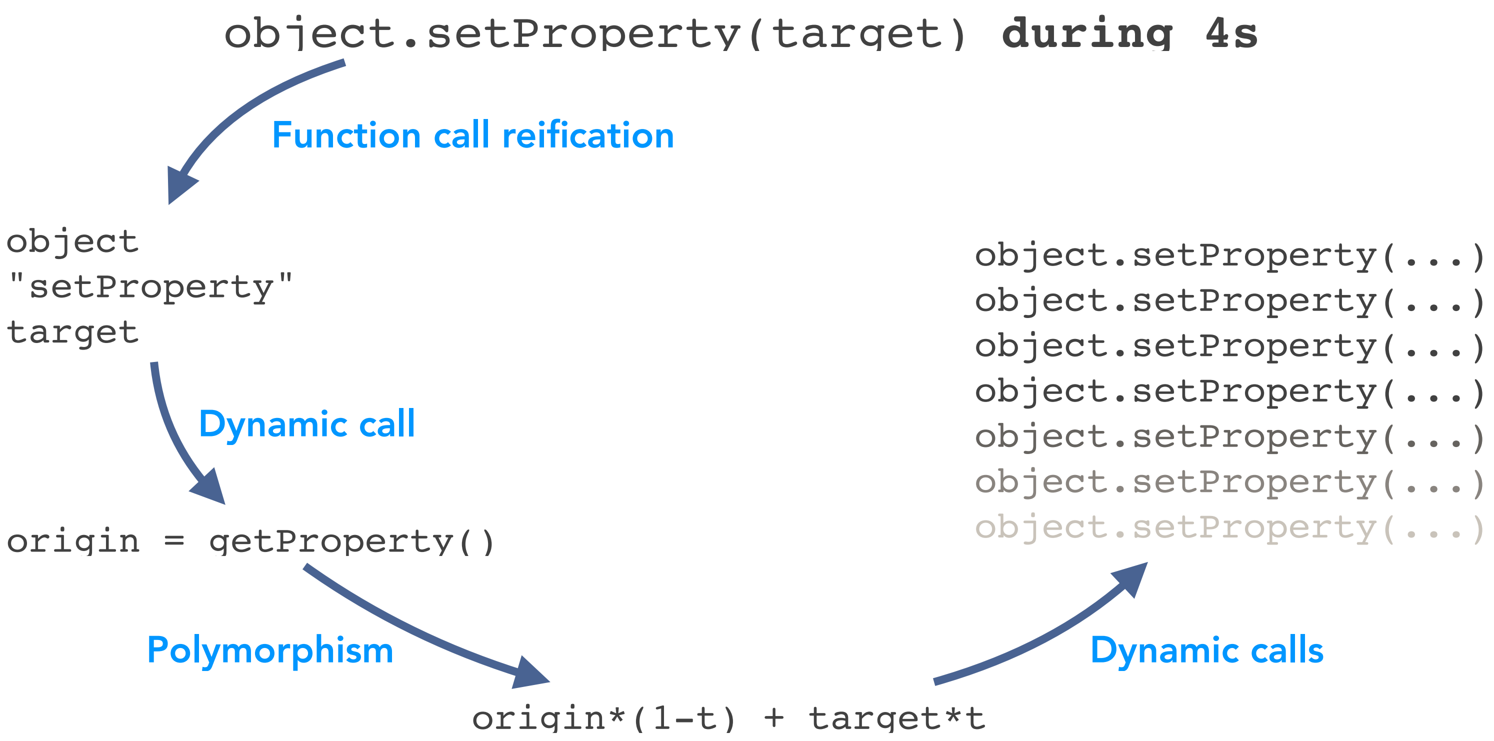

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