
PROGRAMMAZIONE 2

6b. Le eccezioni, operazionalmente

```
class C {  
    public void via(){  
        primo();  
        System.out.println("Sei al via");  
    }  
  
    public void primo(){  
        secondo();  
        System.out.println("Sei al primo");  
    }  
  
    public void secondo(){  
        throw new Exception("Prova");  
        System.out.println("Sei al secondo");  
    }  
}
```

Cosa succede con `(new C()).via();?`

Abstract Stack Machine

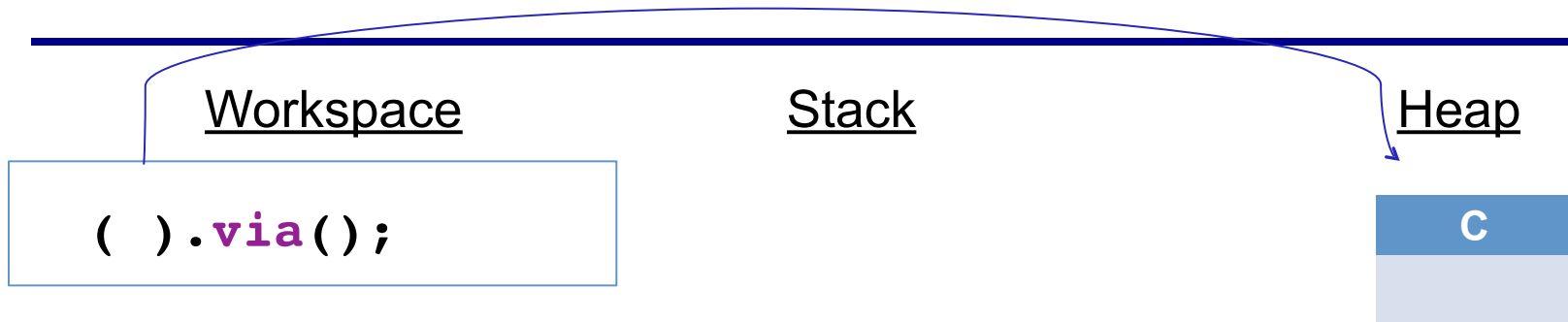
Workspace

```
(new C()).via();
```

Stack

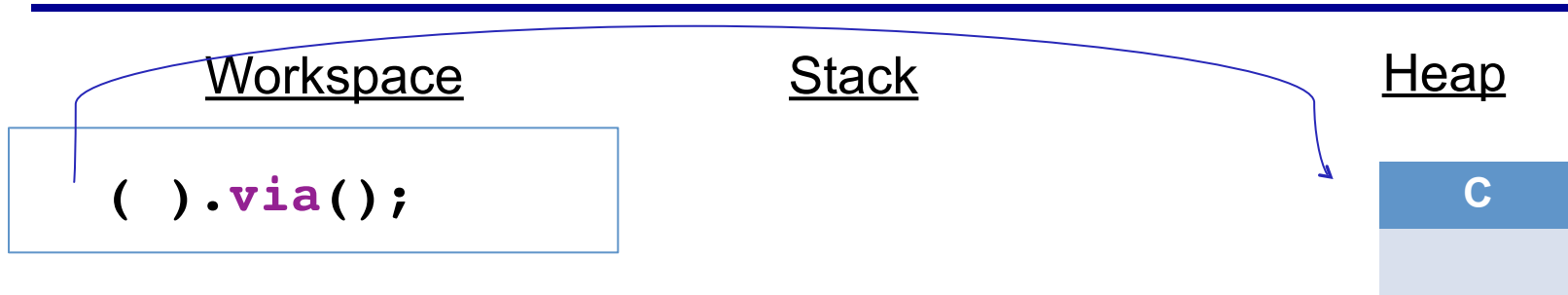
Heap

Abstract Stack Machine



Allocata una istanza della classe C sullo heap

Abstract Stack Machine

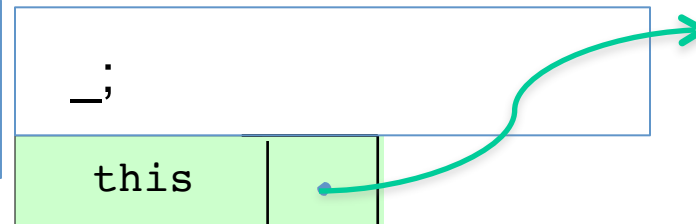


Abstract Stack Machine

Workspace

```
primo();  
S.o.println("Sei al via");
```

Stack



Heap



Viene salvato sullo stack la **continuazione** (cosa eseguire) dopo aver invocato "via"
Viene salvato sullo stack anche il valore corrente di this

Abstract Stack Machine

Workspace

Stack

Heap

```
primo();  
S.o.println("Sei al via");
```

;

this

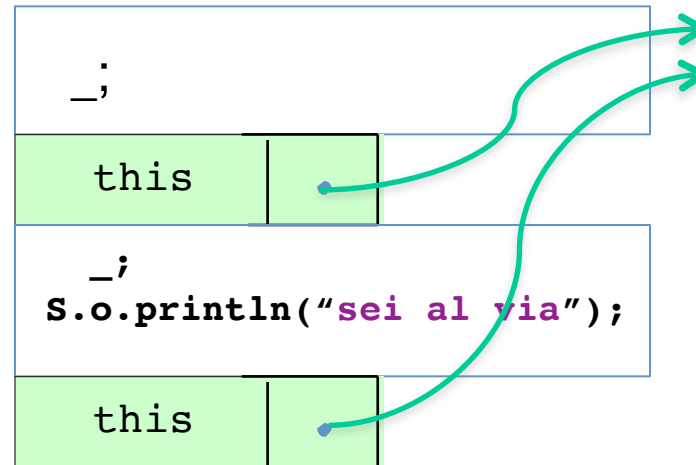
C

Abstract Stack Machine

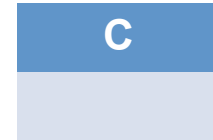
Workspace

```
secondo();  
S.o.println("Sei al primo");
```

Stack



Heap

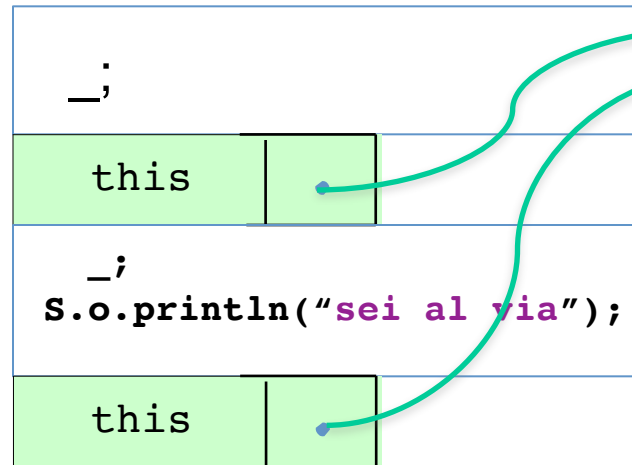


Abstract Stack Machine

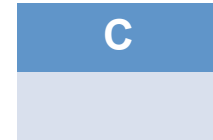
Workspace

```
secondo();  
S.o.println("Sei al primo");
```

Stack



Heap

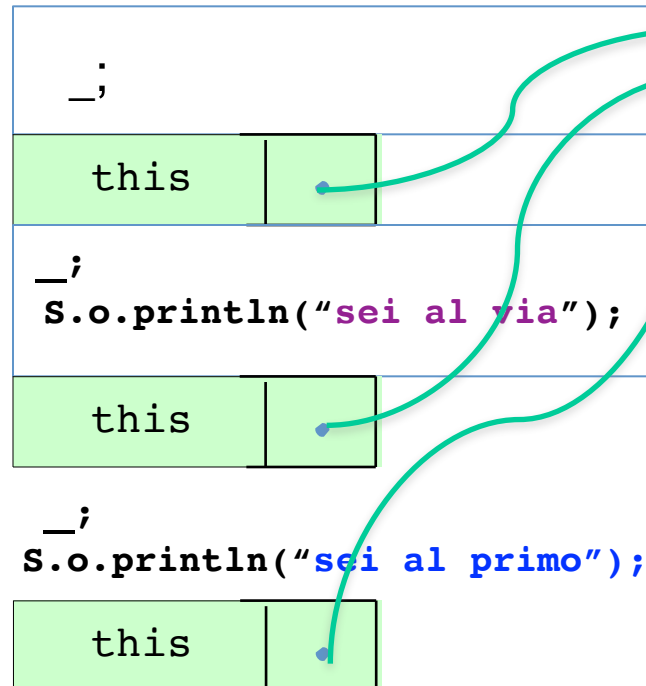


Abstract Stack Machine

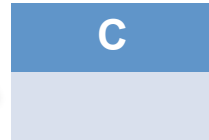
Workspace

```
throw new Exception();  
S.o.println("sei al secondo");
```

Stack



Heap

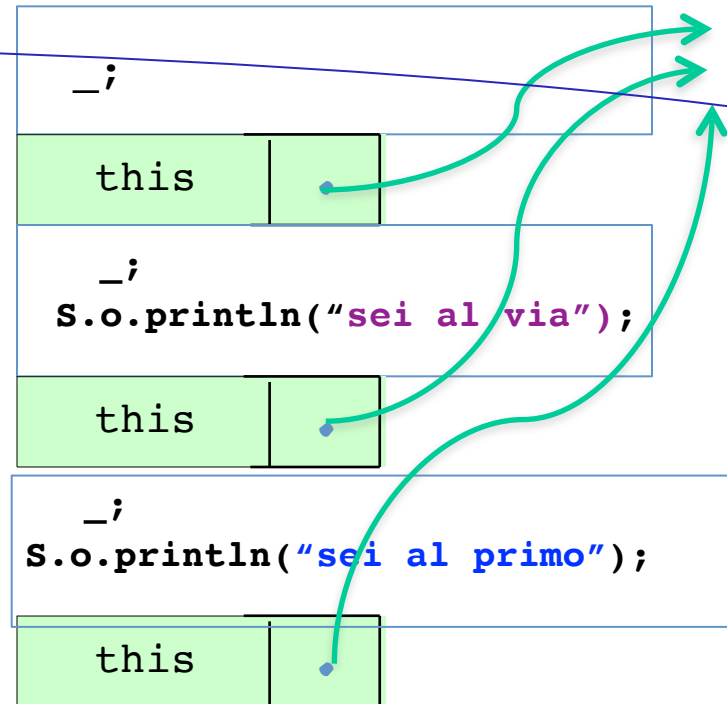


Abstract Stack Machine

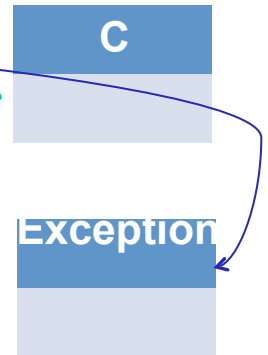
Workspace

```
throw();  
S.o.println("sei al secondo");
```

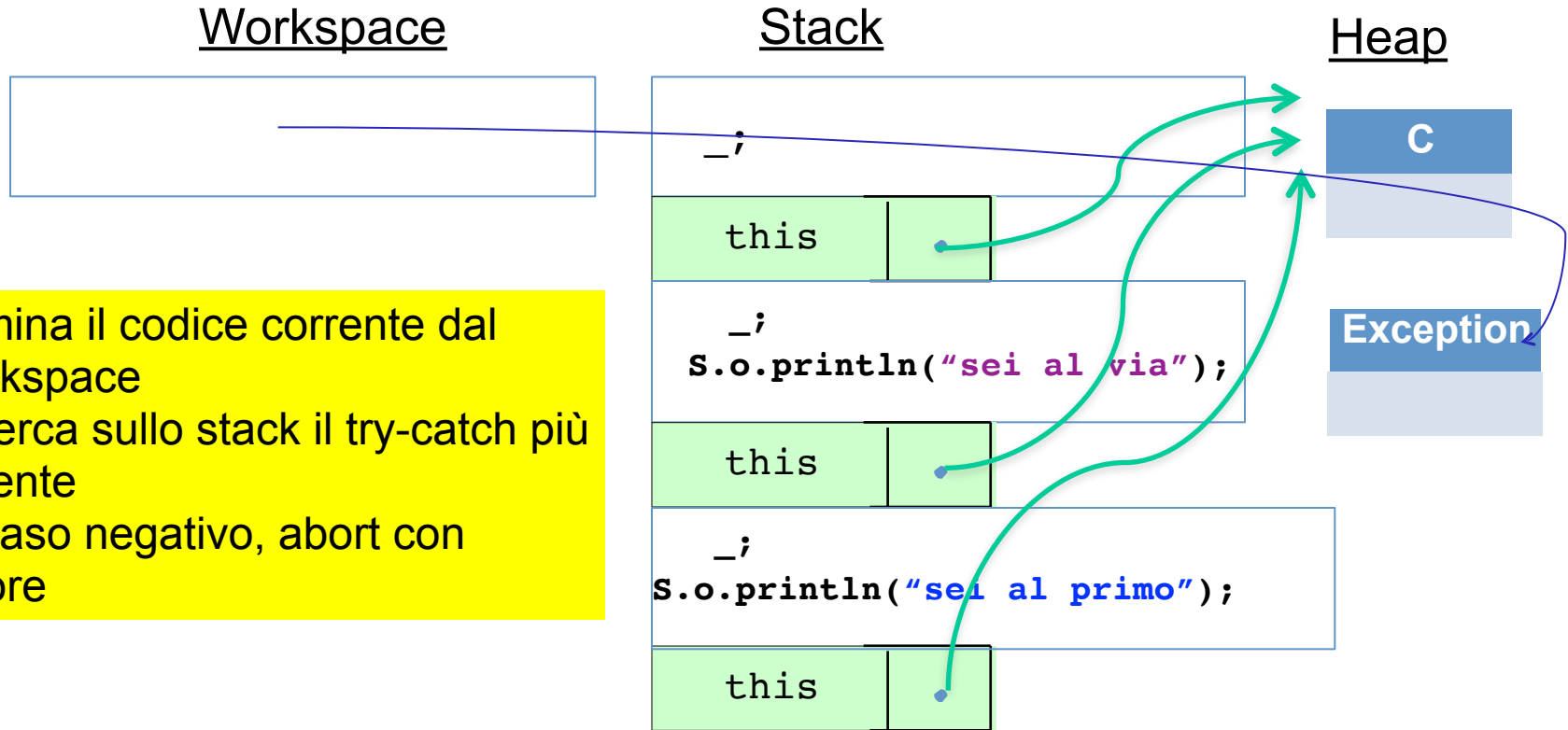
Stack



Heap

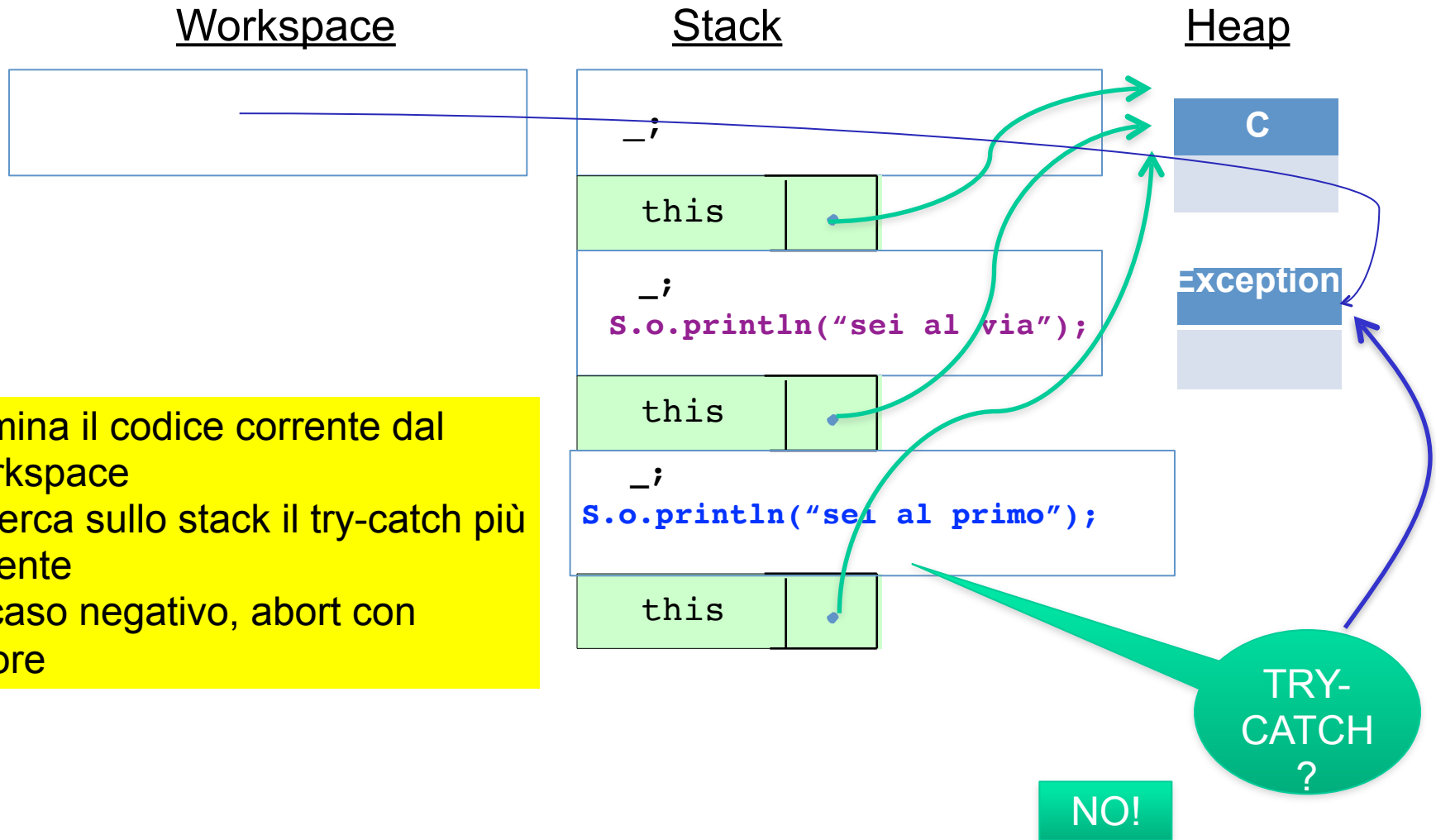


Abstract Stack Machine

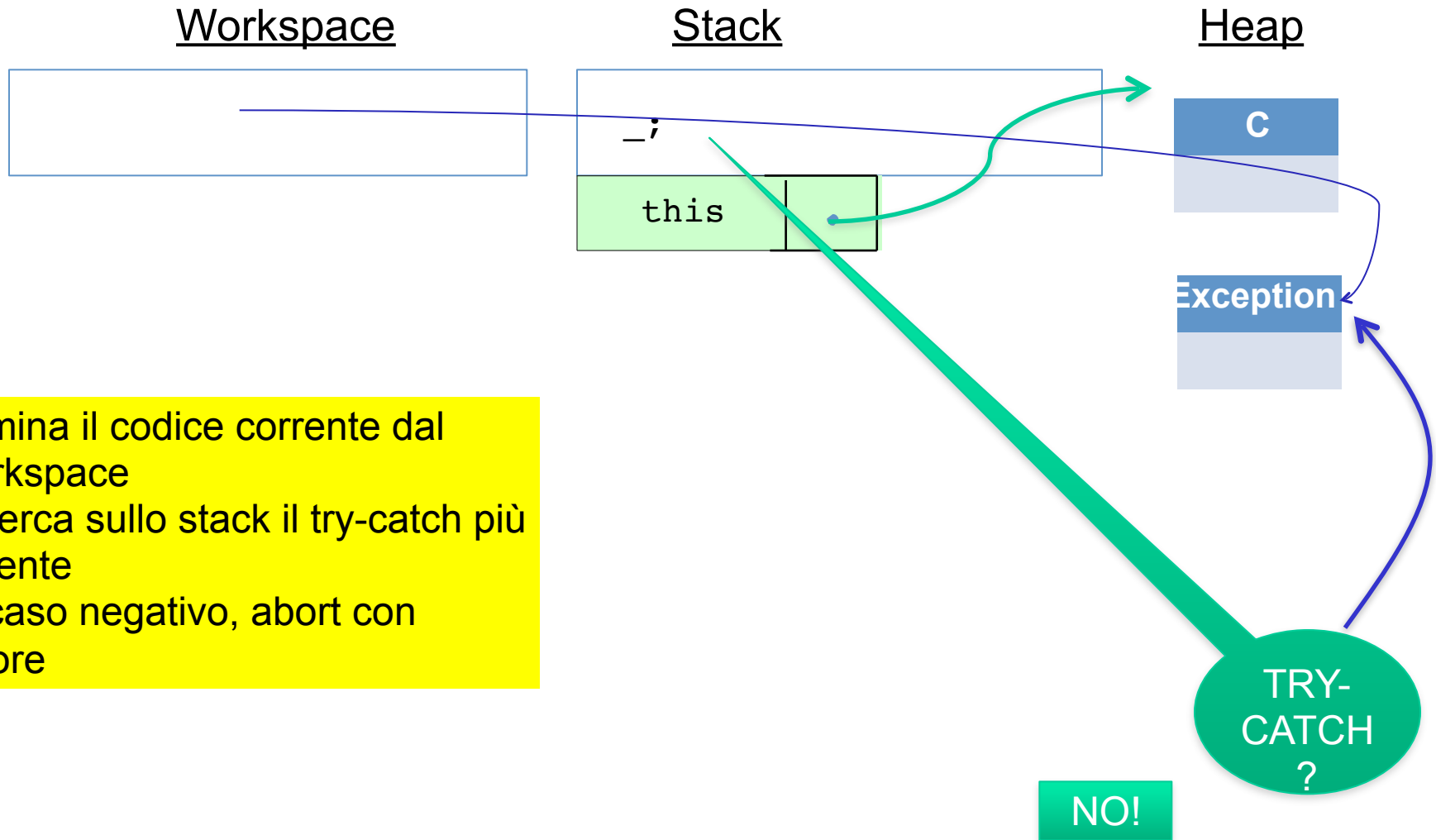


Elimina il codice corrente dal workspace
 Ricerca sullo stack il try-catch più recente
 In caso negativo, abort con errore

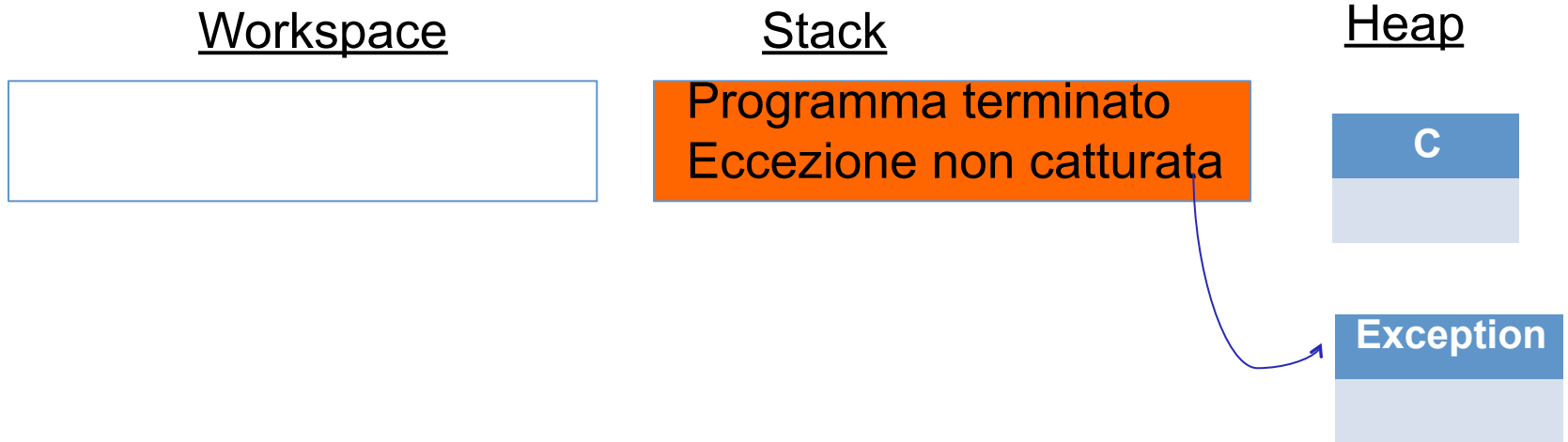
Abstract Stack Machine



Abstract Stack Machine



Abstract Stack Machine



```

class C {
    public void via(){
        primo();
        System.out.println("Sei al via");
    }

    public void primo(){
        try{secondo();}
        catch (Exception e)
        {System.out.println("catturata" + e);}
        System.out.println("Sei al primo");
    }

    public void secondo(){
        throw new Exception();
        System.out.println("Sei al secondo");
    }
}

```

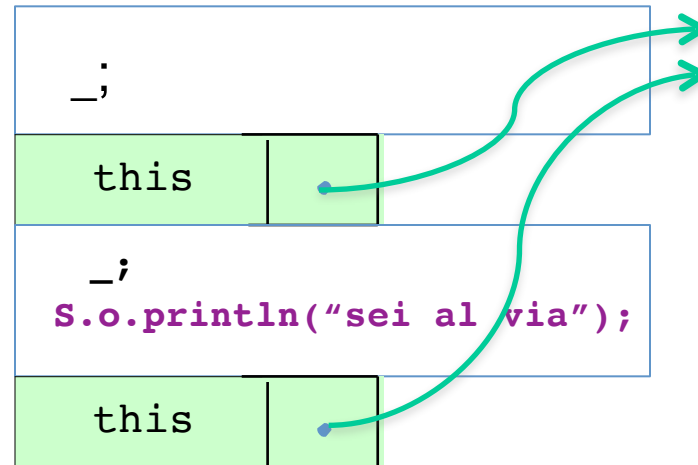
Cosa succede con `(new C()).via();`?

Abstract Stack Machine

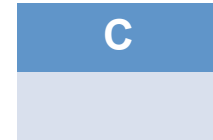
Workspace

```
try{secondo( ); }
catch( ... ) { ... }
S.o.println("sei al primo");
```

Stack



Heap

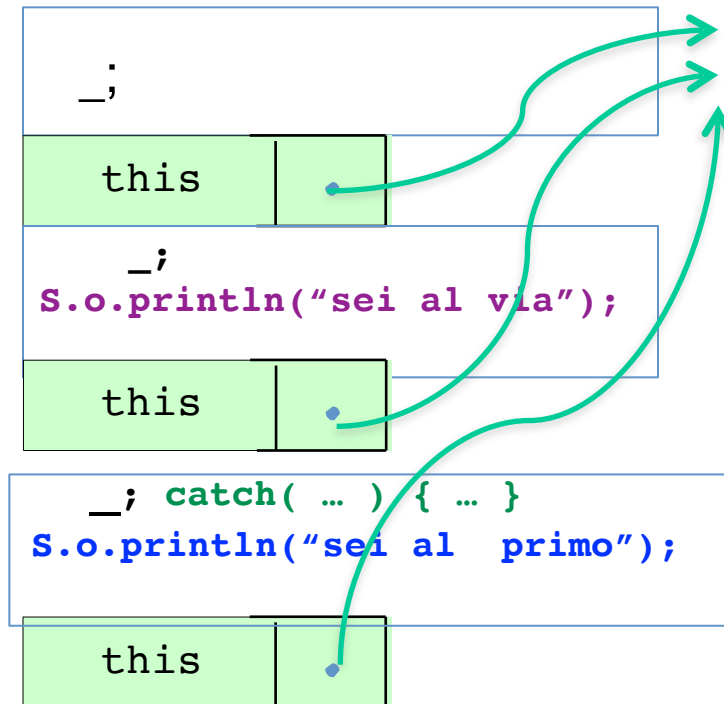


Abstract Stack Machine

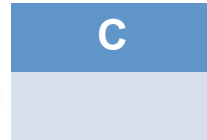
Workspace

```
secondo( );
```

Stack



Heap



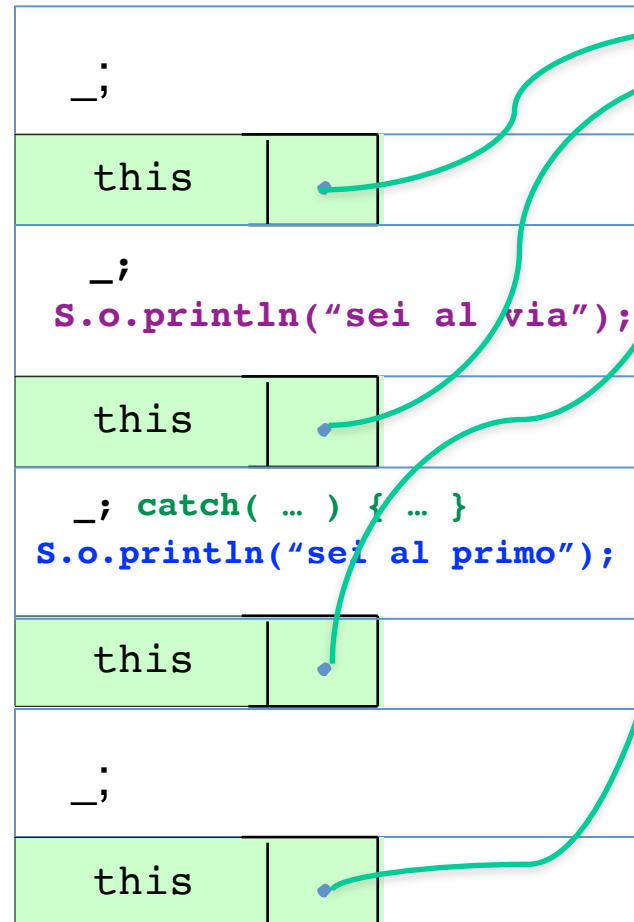
L'esecuzione del try-catch inserisce sullo stack il codice di gestione e lascia sul workspace il codice monitorato

Abstract Stack Machine

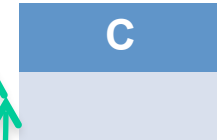
Workspace

```
throw new Exception();
S.o.println("sei al secondo");
```

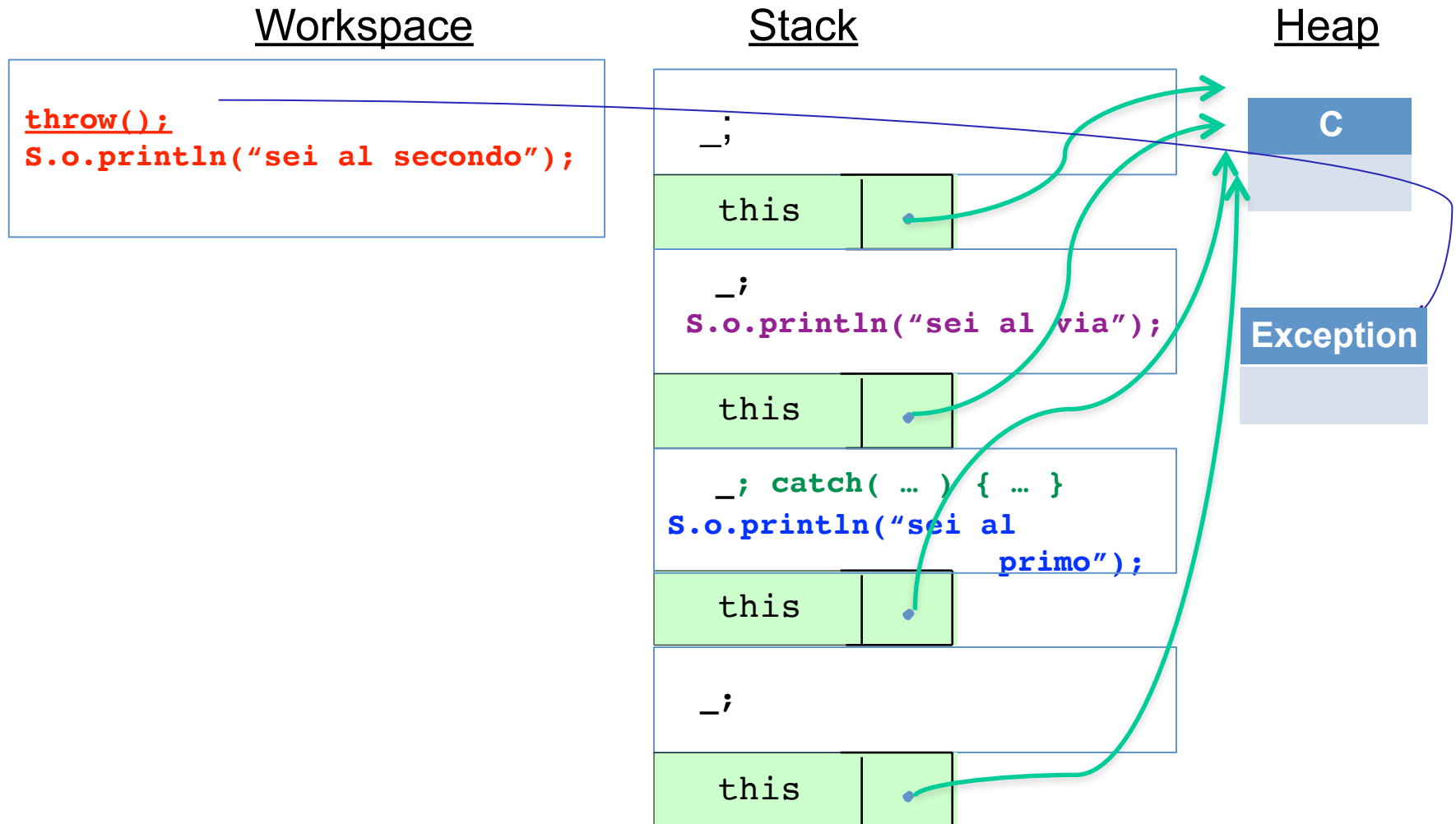
Stack



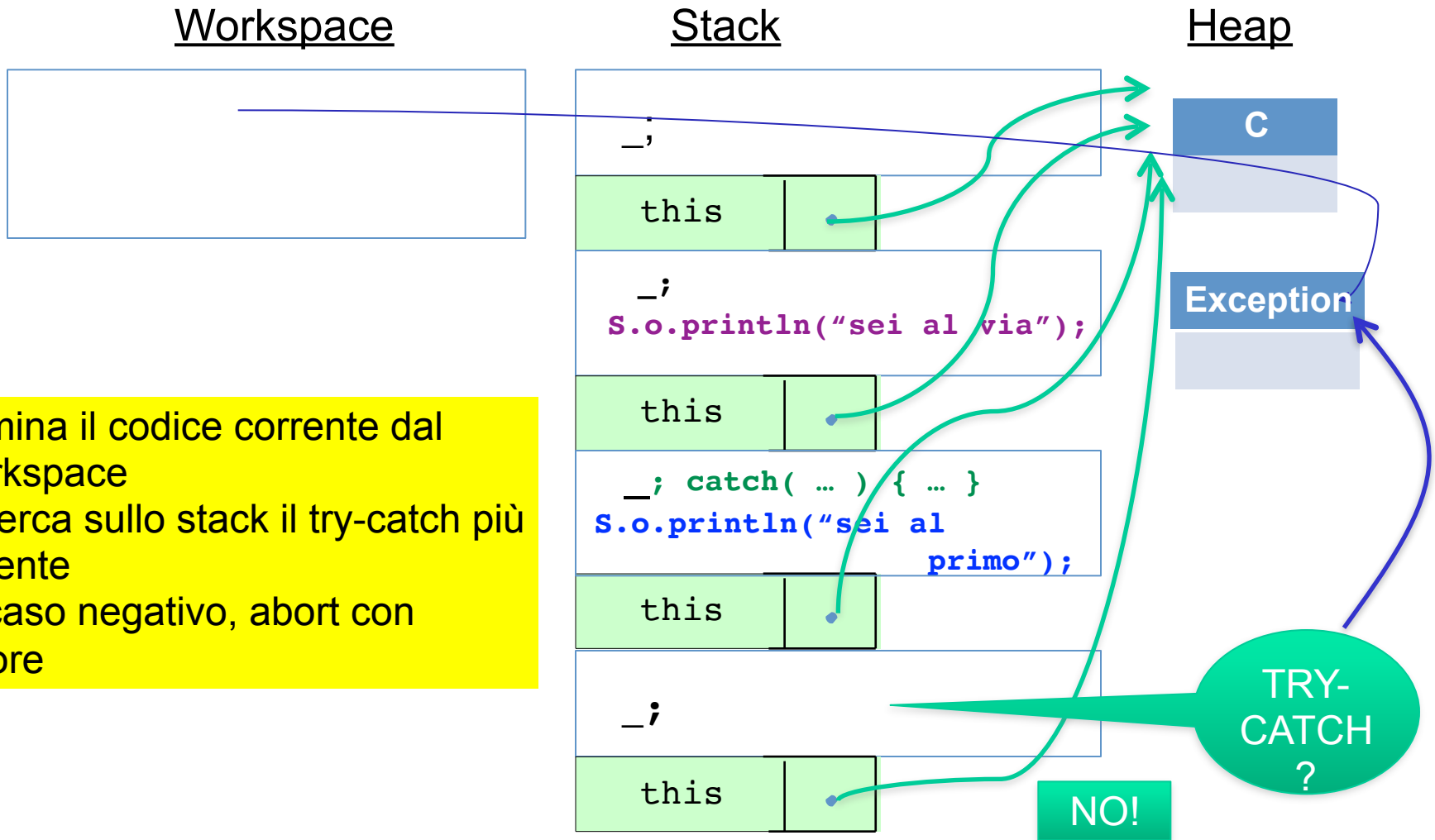
Heap



Abstract Stack Machine

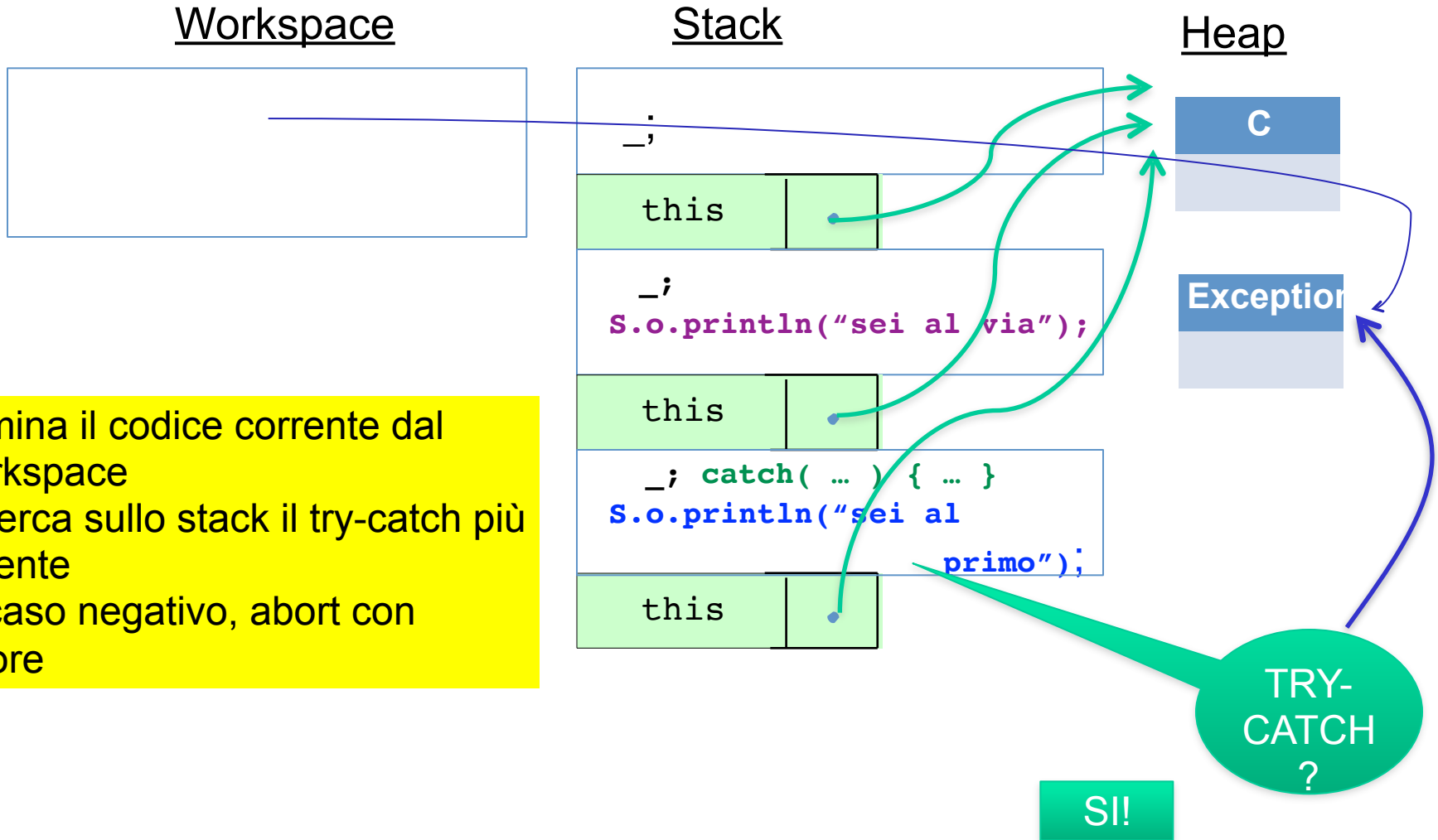


Abstract Stack Machine



Elimina il codice corrente dal workspace
 Ricerca sullo stack il try-catch più recente
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Abstract Stack Machine

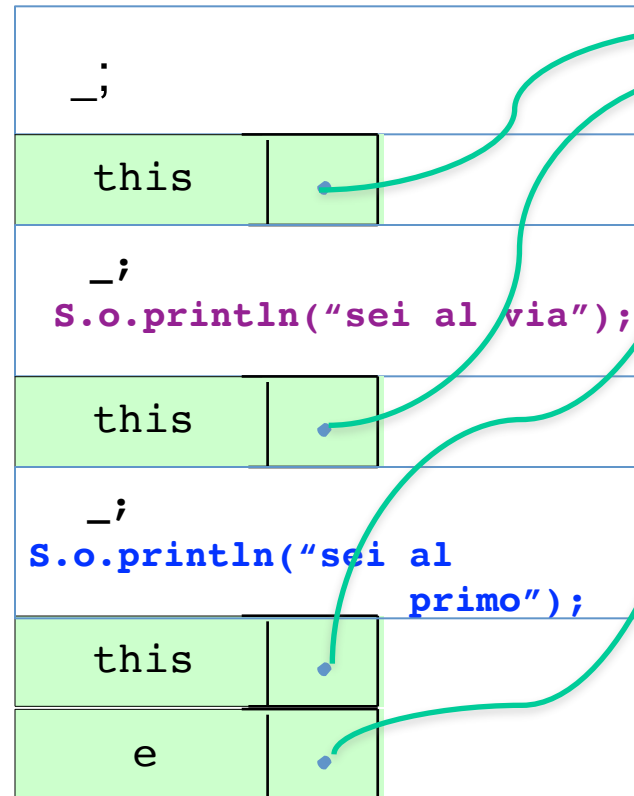


Abstract Stack Machine

Workspace

```
S.o.println
("catturata " + e);
```

Stack



Heap

