

AA 2016-2017

6b. Le eccezioni, operazionalmente



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

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

Abstract Stack Machine



Workspace

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

Stack

Heap

Abstract Stack Machine



Workspace

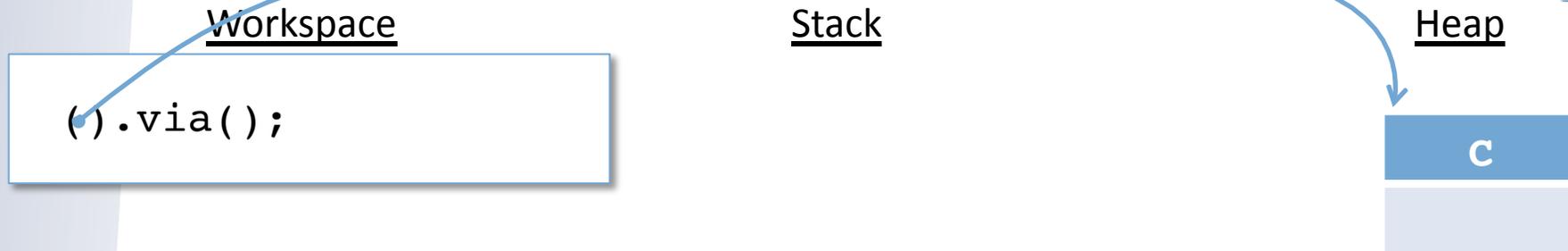
```
(new C()).via();
```

Stack

Heap



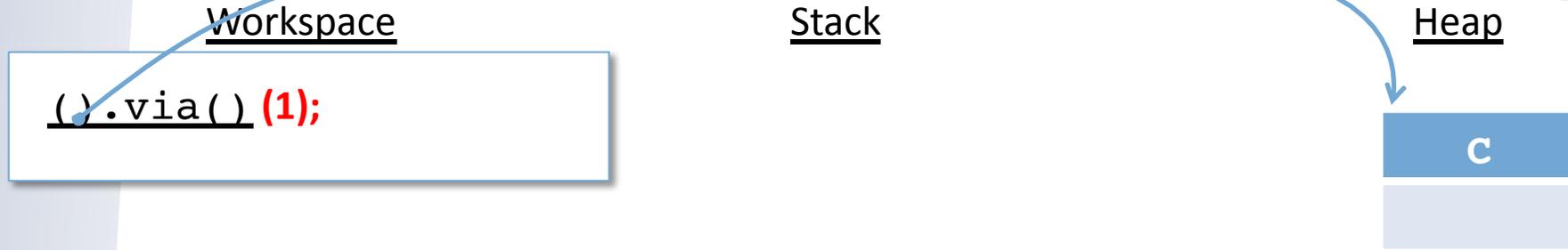
Abstract Stack Machine



Allocata una istanza della classe C sullo heap



Abstract Stack Machine



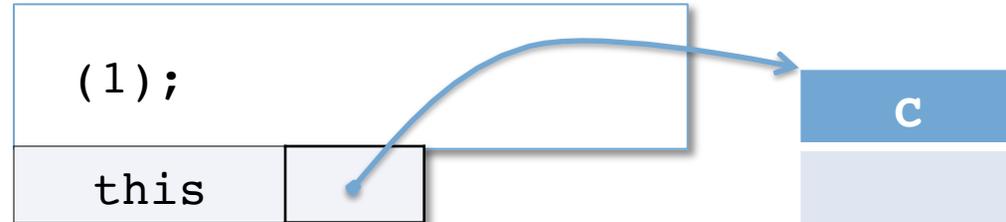


Abstract Stack Machine

Workspace

```
primo( );  
S.out.println(  
"siamo al via");
```

Stack



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

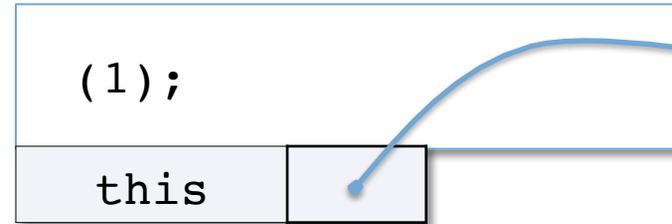


Abstract Stack Machine

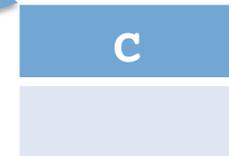
Workspace

```
primo( );  
S.out.println(  
"siamo al via");
```

Stack



Heap



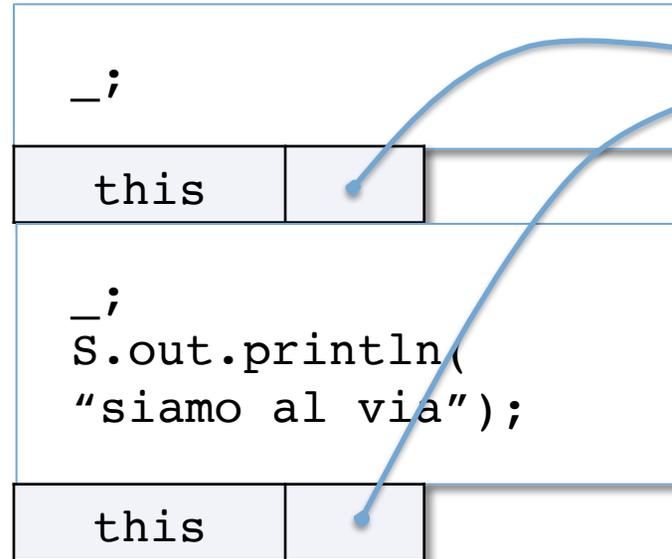


Abstract Stack Machine

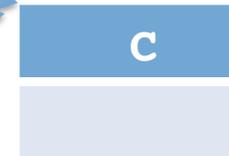
Workspace

```
secondo( );  
S.out.println(  
"siamo nel primo");
```

Stack



Heap



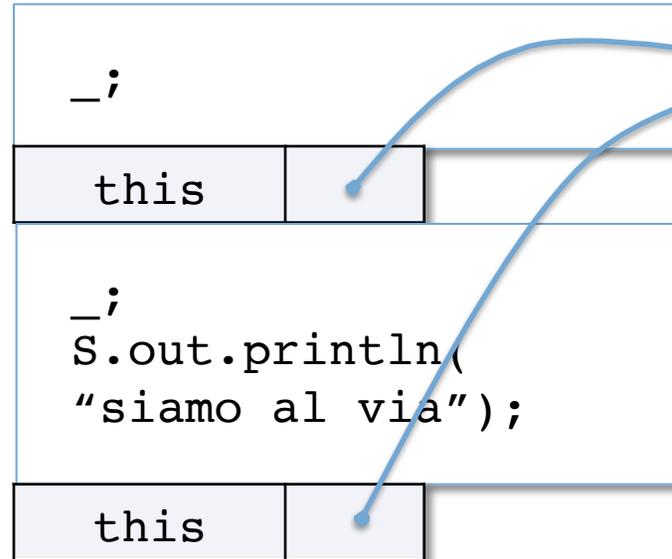


Abstract Stack Machine

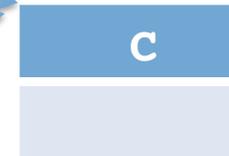
Workspace

```
secondo( );  
S.out.println(  
"siamo nel primo");
```

Stack



Heap



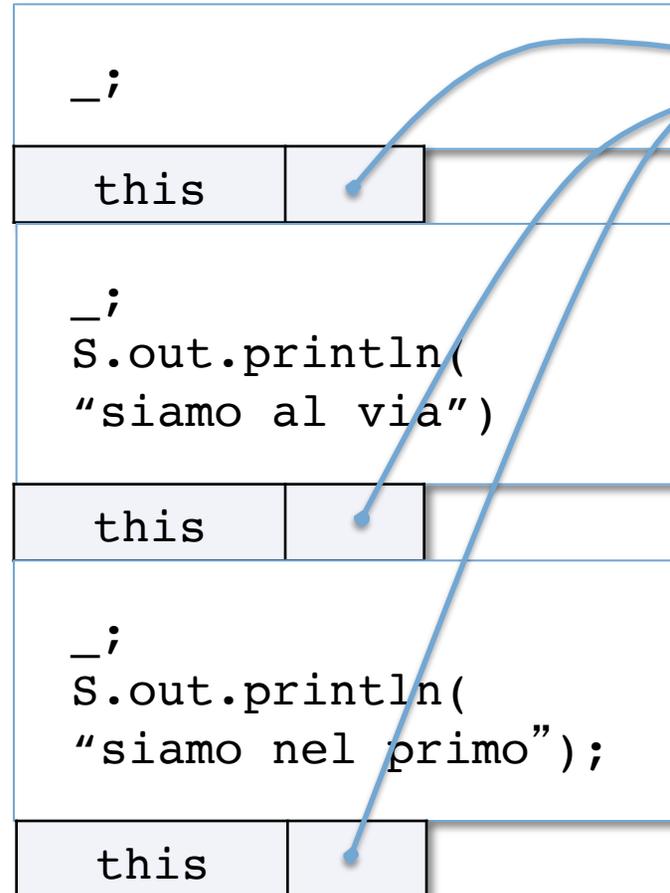


Abstract Stack Machine

Workspace

```
throw new Exception();  
S.out.println(  
"siamo nel secondo");
```

Stack



Heap



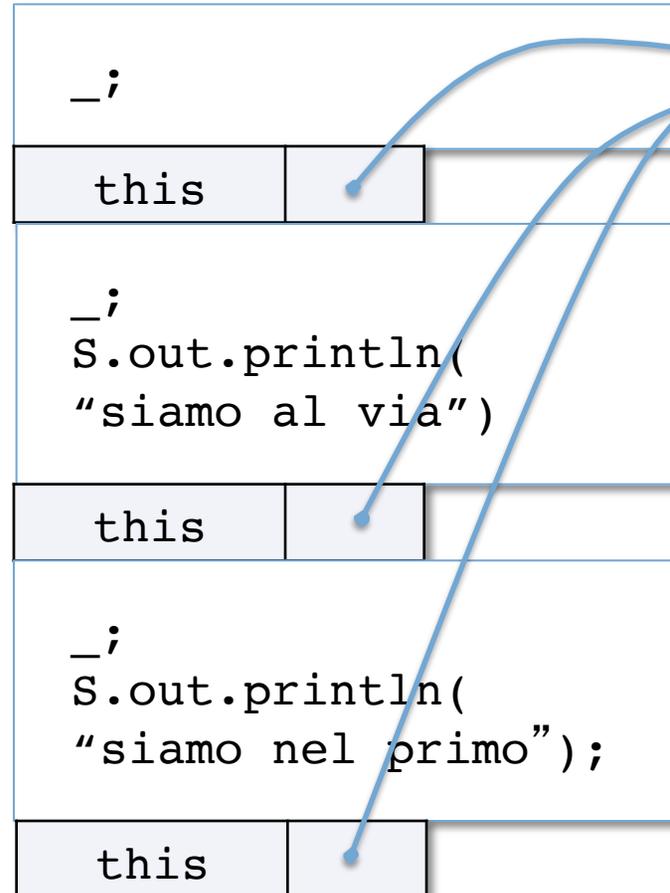


Abstract Stack Machine

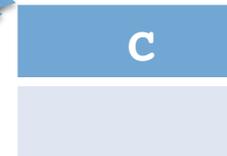
Workspace

```
throw new Exception();  
S.out.println(  
"siamo nel secondo");
```

Stack

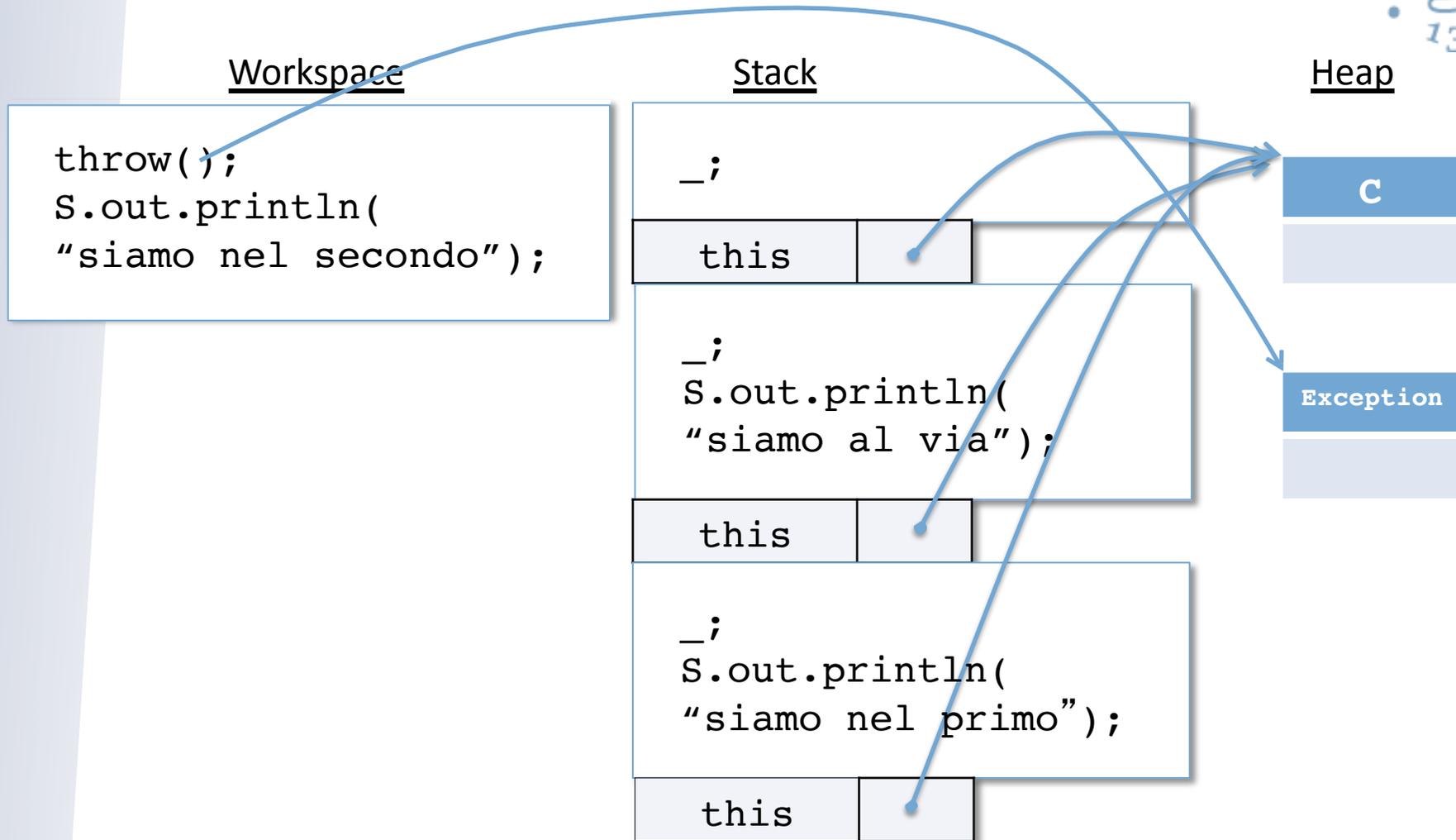


Heap



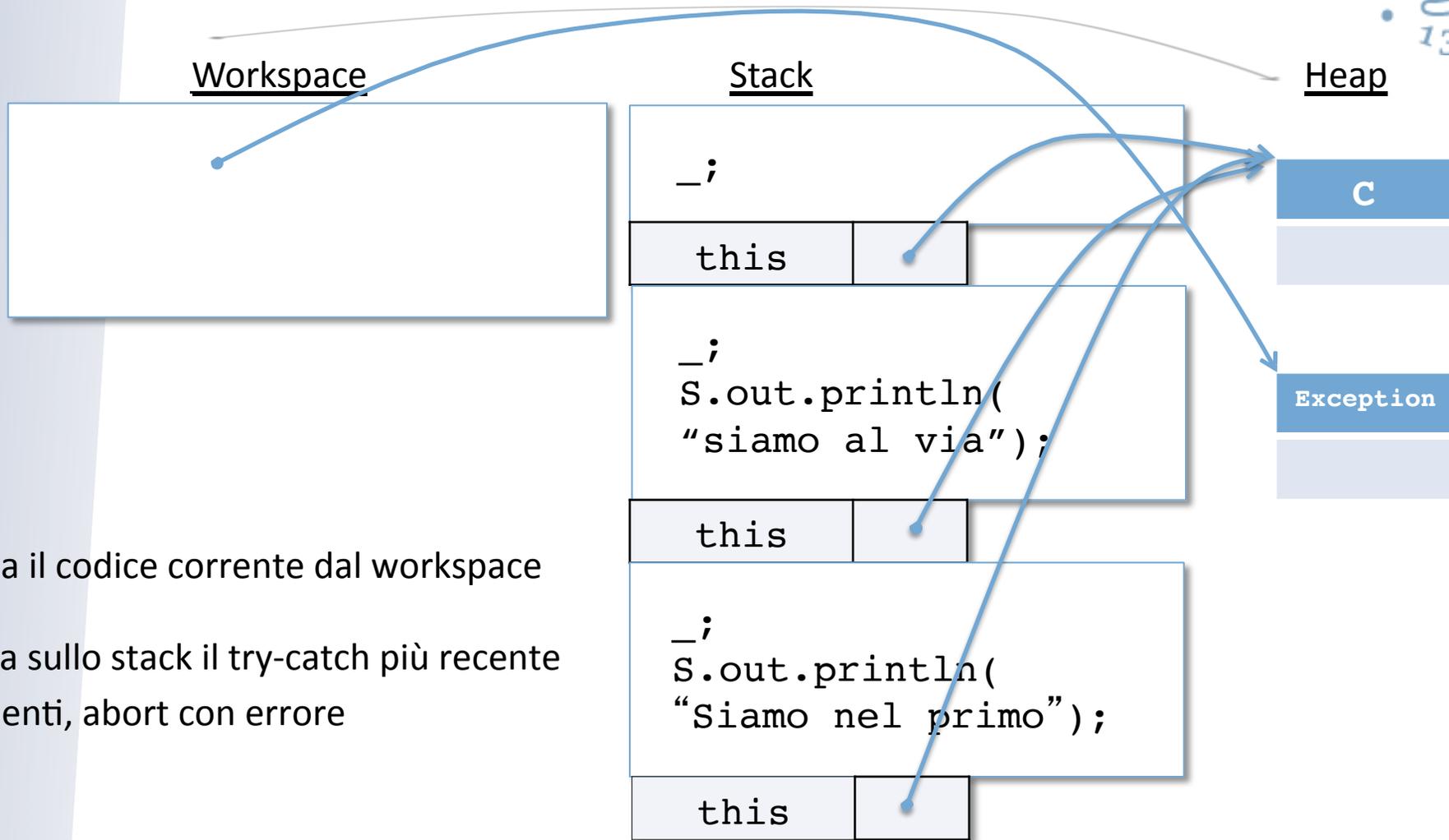


Abstract Stack Machine





Abstract Stack Machine



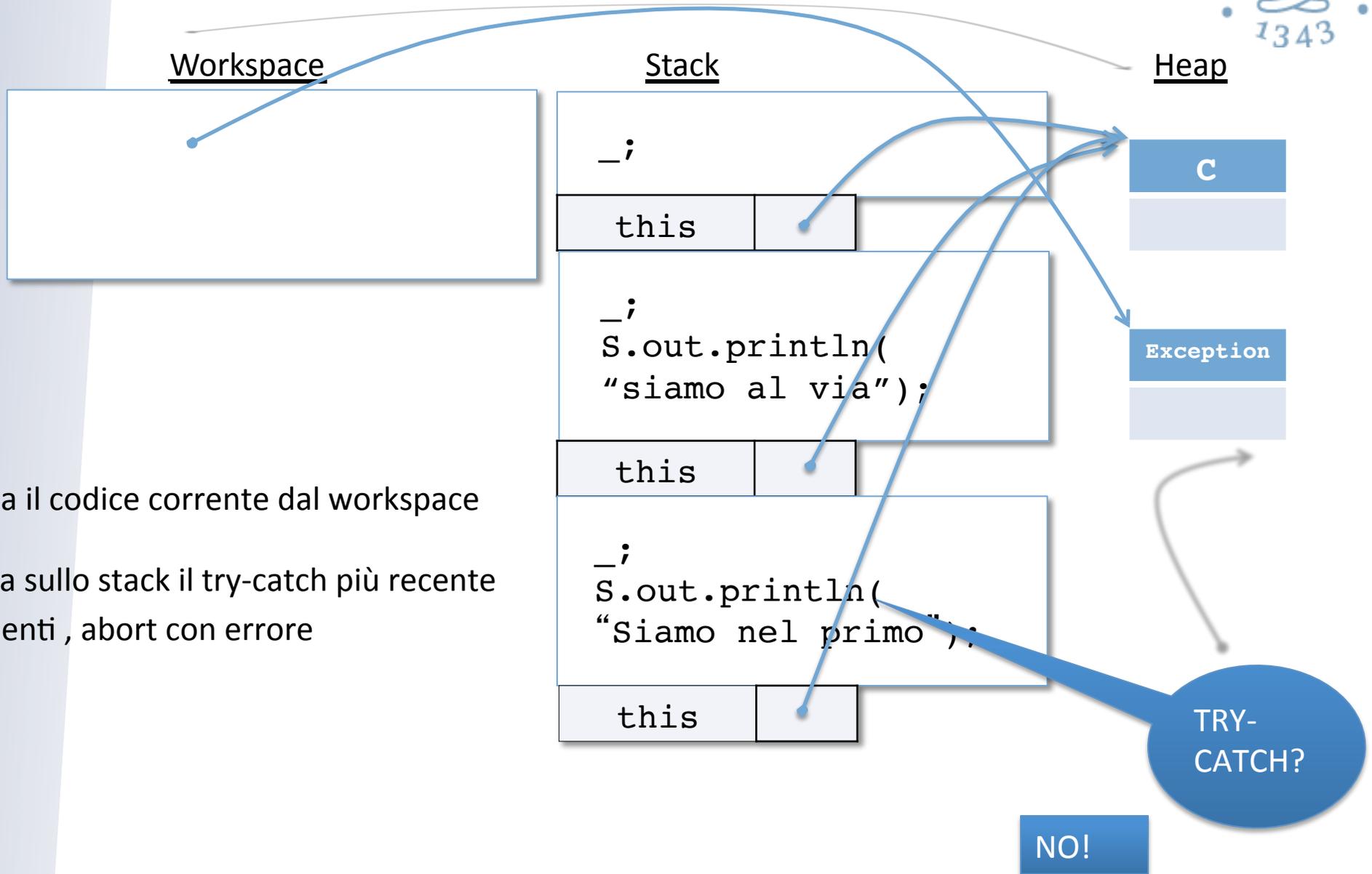
Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti, abort con errore

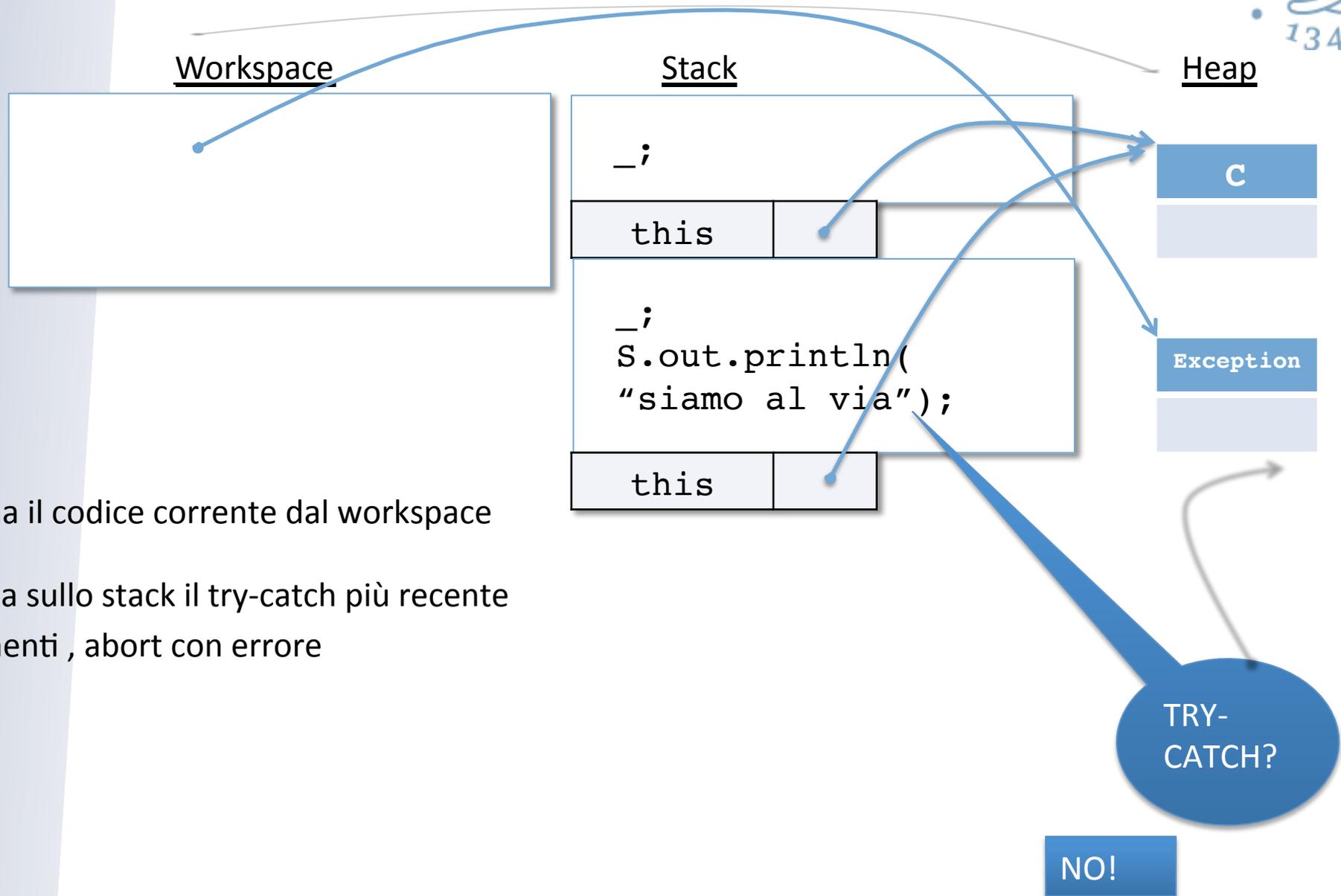


Abstract Stack Machine





Abstract Stack Machine



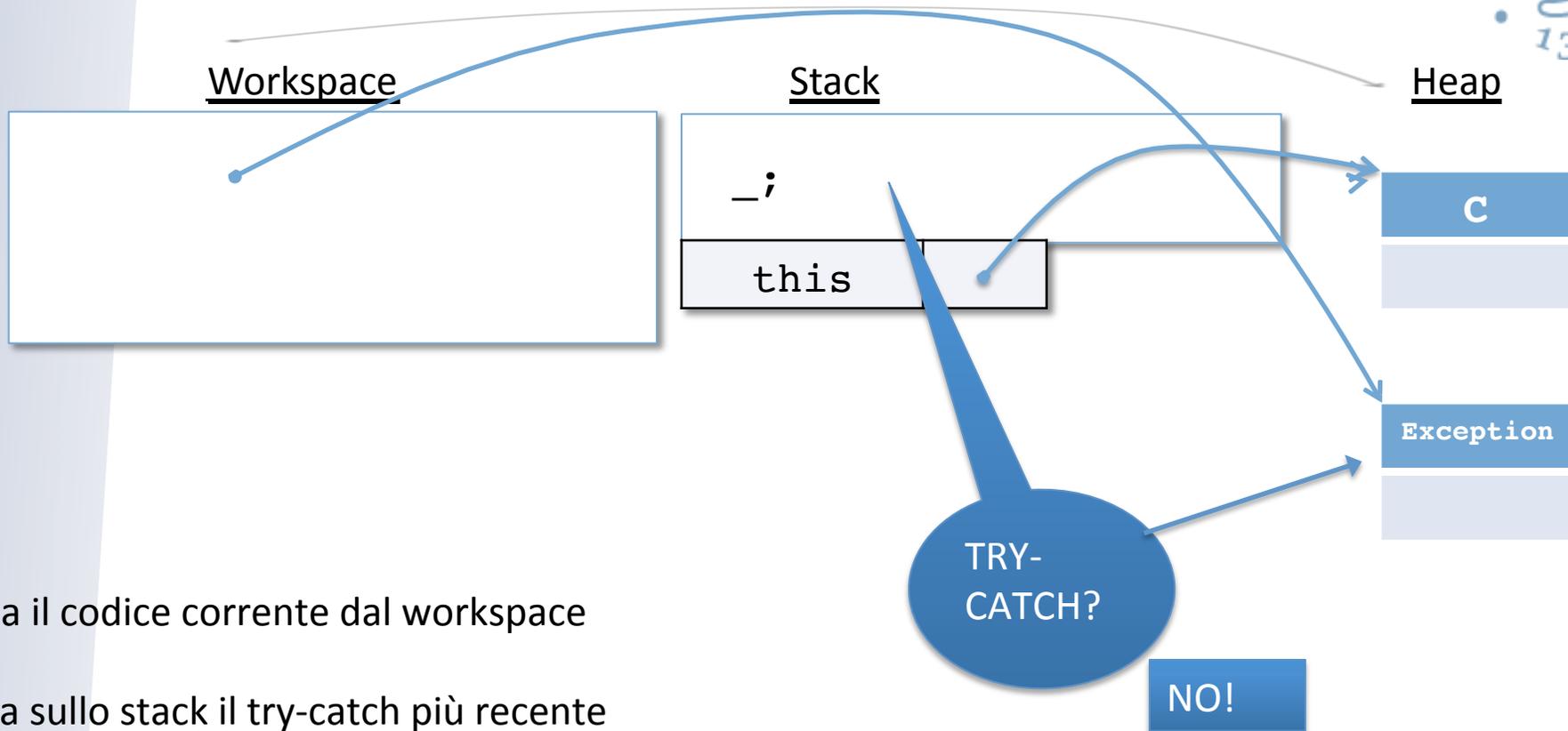
Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore



Abstract Stack Machine



Elimina il codice corrente dal workspace

Ricerca sullo stack il try-catch più recente

Altrimenti , abort con errore



Abstract Stack Machine

Workspace

Stack

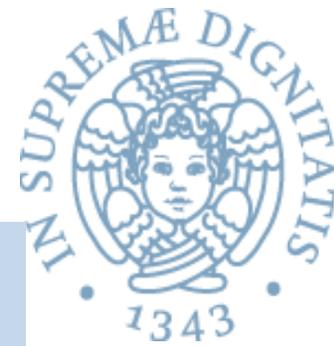
Heap

Programma terminato
Eccezione non catturata

C

Exception



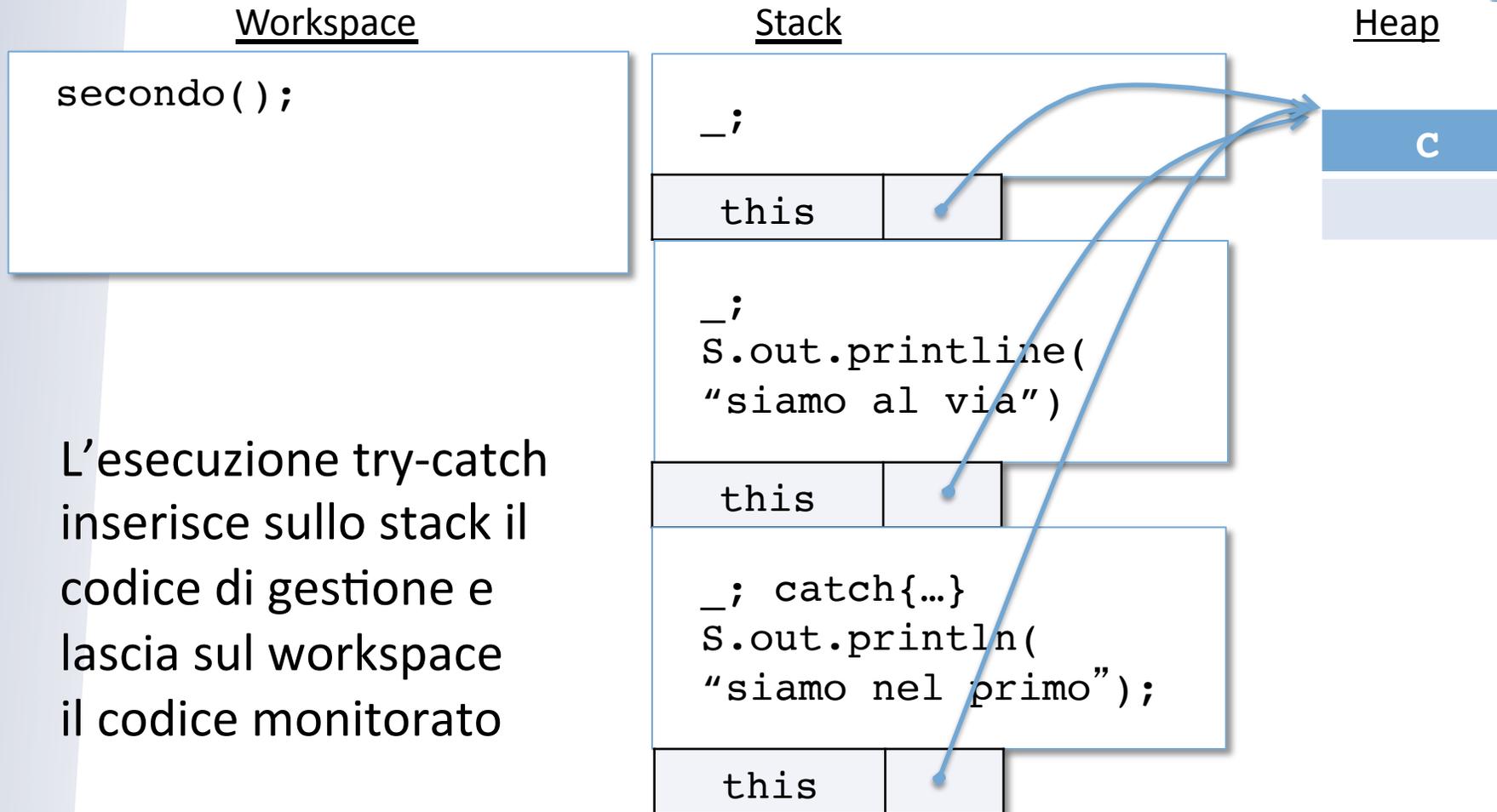


```
class C {  
    public void via( ) {  
        primo( );  
        System.out.println(" siamo al via");  
    }  
  
    public void primo( ) {  
        try { secondo( ); }  
        catch (Exception e) { System.out.println("catturata"); }  
        System.out.println("siamo nel primo");  
    }  
  
    public void secondo( ) {  
        throw new Exception( );  
        System.out.println("siamo nel secondo");  
    }  
}
```

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



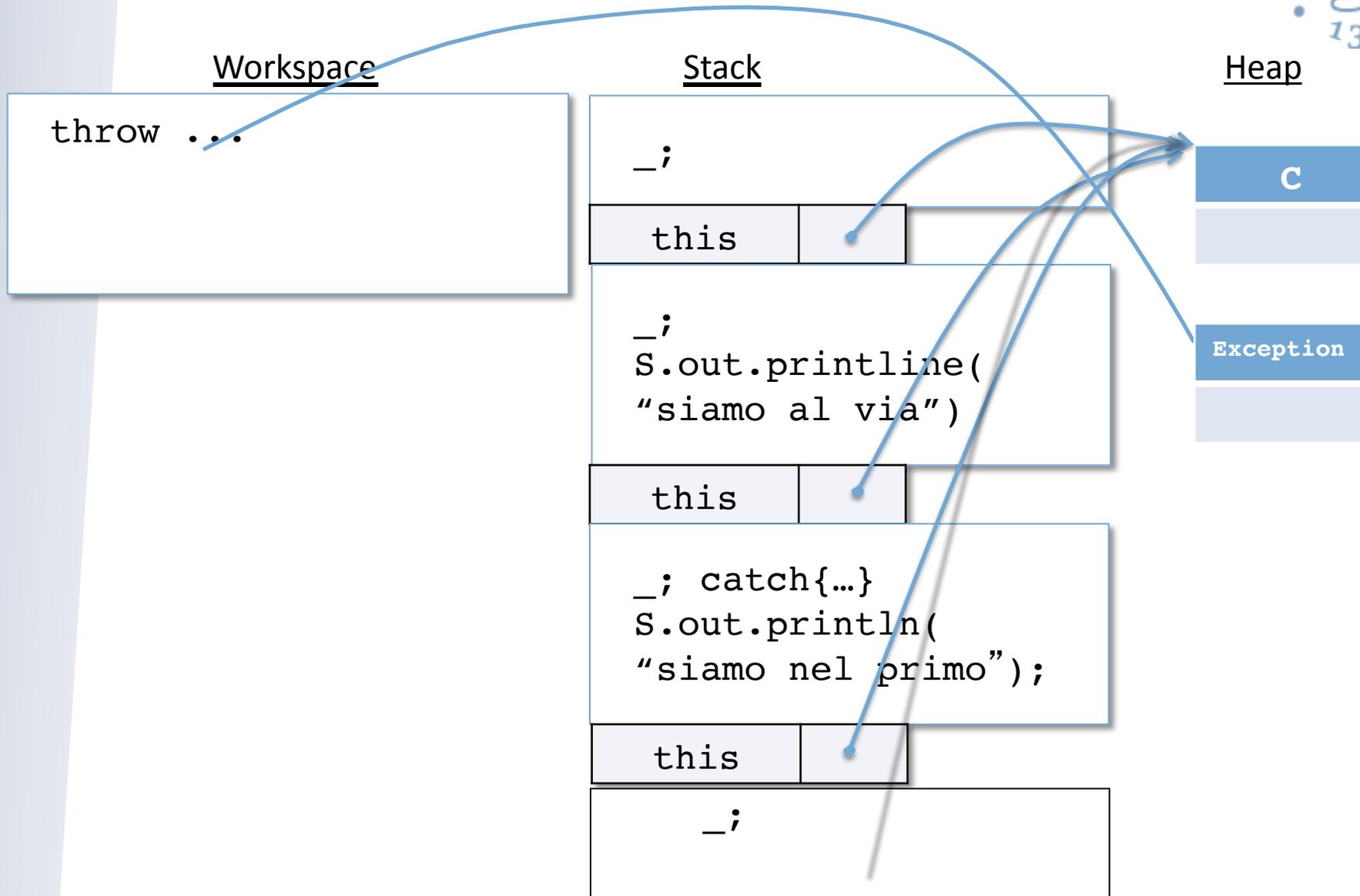
Abstract Stack Machine



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

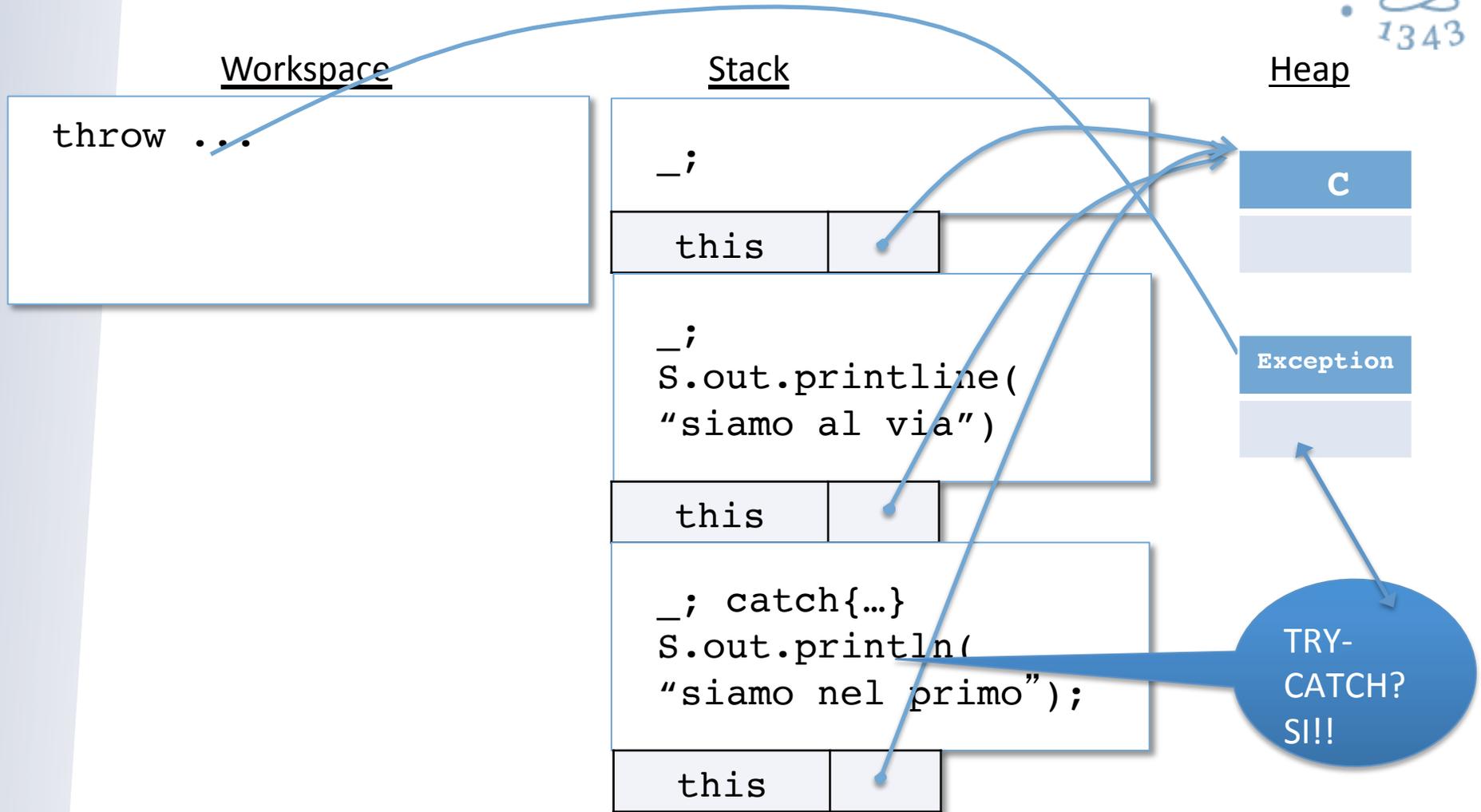


Abstract Stack Machine



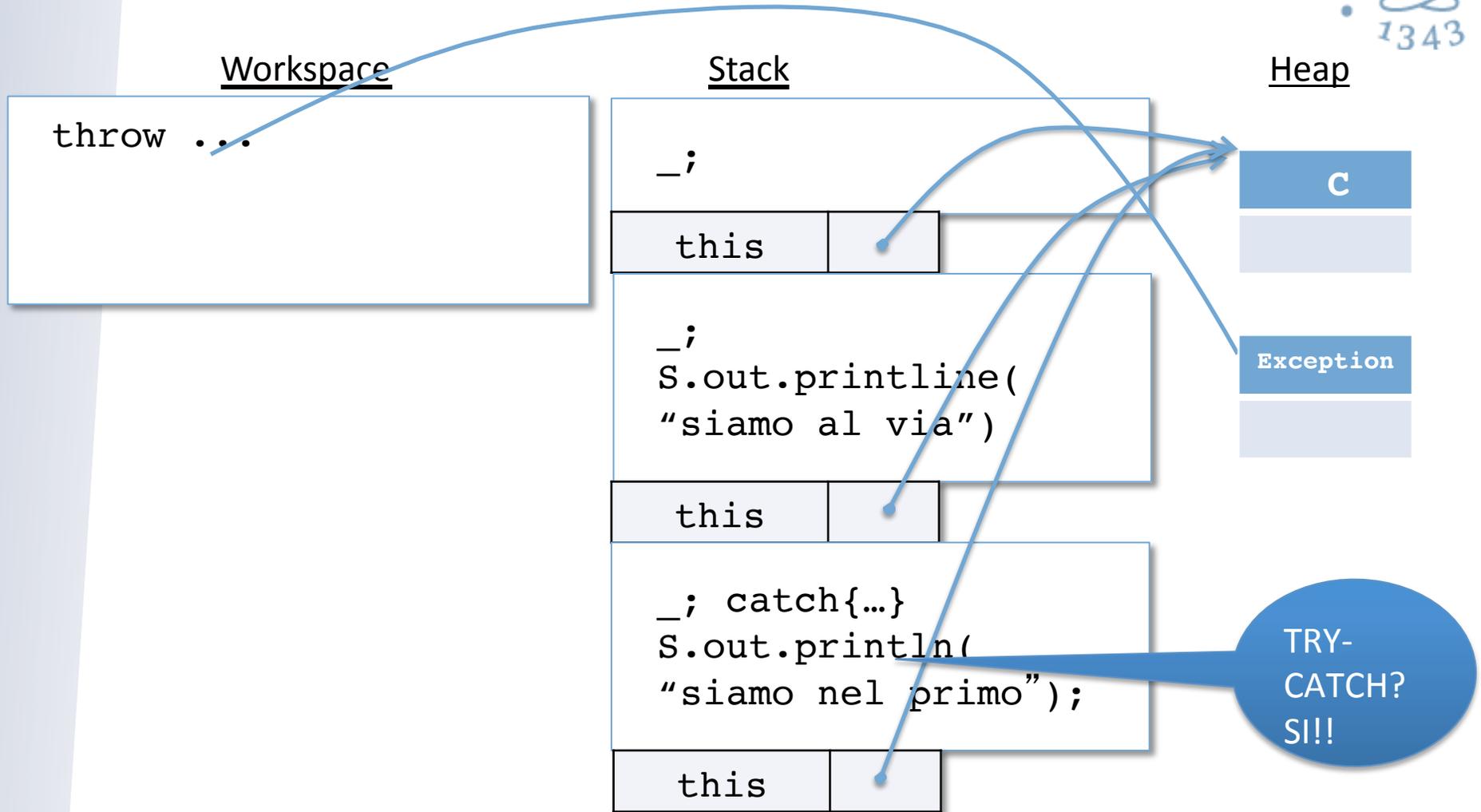


Abstract Stack Machine





Abstract Stack Machine



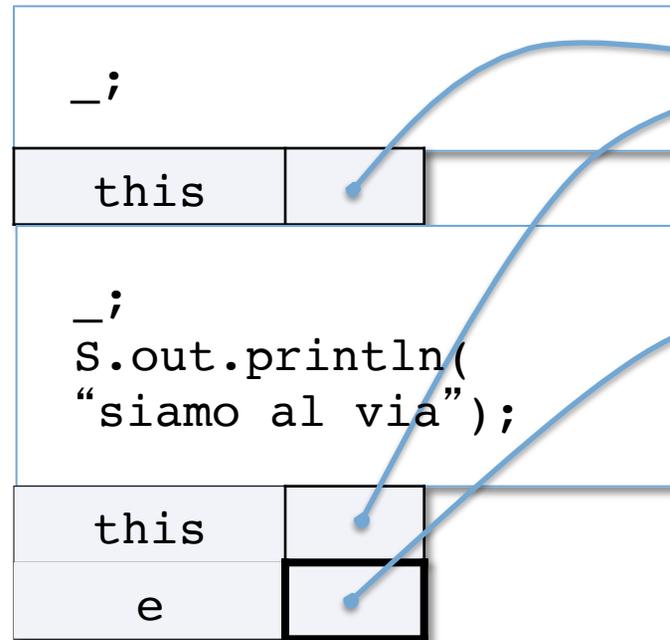


Abstract Stack Machine

Workspace

```
{ System.out.println(  
    "catturata"); }  
System.out.println(  
    "siamo nel primo");
```

Stack



Heap

