

Section 2.1 C++11

Rvalue References

Finally, by defaulting the copy-assignment operator in Person5c (shown in the example above), we regain all of the regular functionality of the original aggregate class, but because of the user-provided copy constructor, Person5c is no longer amenable to aggregate initialization. Note that the destructor is never suppressed by the explicit declaration of any other function.

6. User-provided copy-assignment operator. Once we understand the consequences of user-providing a copy constructor (e.g., Person5c in the example in item 4), there are no surprises here. Again, we'll provide, for reference, only the final, transitive result, Person6b:

```
struct Person6b // adding a user-provided copy-assignment operator
{
   String firstName;
   String lastName;
   Person6b& operator=(const Person6b& rhs)
                                               // copy assignment
        firstName = rhs.firstName;
        lastName = rhs.lastName;
        return *this;
   }
   // already added to Person6a (not shown)
   Person6b(Person6b&&) = default;
                                                // move constructor
   Person6b& operator=(Person6b&&) = default; // move assignment
   // new here in Person6b
   Person6b() = default;
                                                // default constructor
   Person6b(const Person6b&) = default;
                                                // copy constructor
};
```

Again, we've omitted Person6 and Person6a from the example above, but we'll walk through those revisions. Providing a user-defined copy-assignment operator in Person6, unlike providing a copy constructor, leaves the class of aggregate type but similarly suppresses the declaration of both the move constructor and move-assignment operator. Restoring move assignment in Person6a has no further suppressive effects, but restoring move construction in turn suppresses both default construction and copy construction. Class Person6b above provides the same functionality as the original aggregate Person class, i.e., including aggregate initialization, along with the ability to add a benign implementation, affecting no other special-member implementations, to the user-provided copy-assignment operator.