Saxon - Bug #4820

Expression `[1,2,3] castable as xs:integer` returns true

2020-11-10 12:17 - Michael Kay

Status:	Closed		**Start date:**	2020-11-10
Priority:	Normal		**Due date:**	
Assignee:	Michael Kay		**% Done:**	100%
Category:	XPath conformance		**Estimated time:**	0:00 hour
Sprint/Milestone:			**Spent time:**	0:00 hour
Legacy ID:			**Fix Committed on Branch:**	10, trunk
Applies to branch:	10, trunk		**Fixed in Maintenance Release:**	10.5

Description
Raised by Ghislain Fourny on xquery-talk list. Test case CastableAs664 added to QT3.

History

#1 - 2020-11-10 12:20 - Michael Kay

CastableExpression.typeCheck() has the logic

```
                if (converter.isAlwaysSuccessful() && !allowsEmpty() && operand.getCardinality() == StaticProp
erty.ALLOWS_ONE) {
                    return Literal.makeLiteral(BooleanValue.TRUE, this);
                }
```

This wrongly assumes that if the value of the operand is a singleton, then its atomized value will also be a singleton.

#2 - 2020-11-19 13:24 - Michael Kay

- Status changed from New to In Progress

The code for CastableExpression has the comment:

```
    // We need to take care here. The usual strategy of wrapping the operand in an expression that
    // does type-checking doesn't work here, because an error in the type checking should be caught,
    // while an error in evaluating the expression as written should not.
```

I think this suggests it was written before the spec was clarified to say that an error that occurs when atomizing the operand is treated as an error, not as a false result.

I'm therefore going to try doing a staticTypeCheck() call on the operand, with an expected type of xs:anyAtomicType.

#3 - 2020-11-19 13:40 - Michael Kay

By doing a "standard" call on staticTypeCheck with an expected type of xs:anyAtomicType*, we pass all the CastableExpr tests including the new one. There are two "wrong error code" results:

CastableAs666 and CastableAs668 both return FOTY0013 rather than XPTY0004.

These are recent tests and a careful reading of the spec shows that the expected error code is wrong, so I will fix the tests.

#4 - 2020-11-19 13:43 - Michael Kay

- Status changed from In Progress to Resolved

- Applies to branch 10, trunk added

- Fix Committed on Branch 10, trunk added

#5 - 2021-04-14 17:49 - O'Neil Delpratt

- Status changed from Resolved to Closed

- % Done changed from 0 to 100

- Fixed in Maintenance Release 10.5 added

Bug fix applied to Saxon 10.5 maintenance release.