

```

require( inline )
require( Rcpp )
convolve <- cxxfunction(
  signature( a = "numeric", b = "numeric" ), '
  NumericVector xa(a); int n_xa = xa.size() ;
  NumericVector xb(b); int n_xb = xb.size() ;
  NumericVector xab(n_xa + n_xb - 1,0.0);

  Range r( 0, n_xb-1 );
  for(int i=0; i<n_xa; i++, r++){
    xab[ r ] += noNA(xa[i]) * noNA(xb) ;
  }
  return xab ;
', plugin = "Rcpp" )
convolve( 1:4, 1:5 )
[1] 1 4 10 20 30 34 31 20

```